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Museum Rusticum et Commerciale :

O R,

SELECT PAPERS

O N

AGRICULTURE, || ARTS, AND
COMMERCE, || MANUFACTURES.

DRAWN FROM EXPERIENCE,

A N D

Communicated by GENTLEMEN engaged in
these Pursuits.

Revised and Digested by several MEMBERS of the SOCIETY for the
Encouragement of ARTS, MANUFACTURES, and COMMERCE.

VOLUME THE SECOND.

Hæ tibi erunt Artes.

L O N D O N :

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SECOND VOLUME.

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Museum Rusticum, &c.

For MARCH, 1764.

VOLUME the SECOND.

NUMBER I.

A Letter to the Editors, on the Culture of Coleseed, &c.

GENTLEMEN,

I Approve of your work, which is the reason of my writing to you.

That your correspondents should be numerous, seems to be your wish: this letter adds one to the number; but whether you will think such a miscellaneous production worthy a place in your collection, I am yet at a loss to know. If it makes its appearance, I may probably trouble you again; if it should, on the contrary, be *laid aside*, I shall of course write no more.

Let my manner of conveying my sentiments be awkward as it will, you may depend upon it I shall never send you any accounts but what are warranted by experience.

The improvements in the modern agriculture are many; and among them, that of sowing the coleseed plant is far

from being of the least consequence. It is but within these forty years, or thereabouts, that the culture of this plant has been common in England; our ancestors knew not its value, and of course neglected it.

In the neighbourhood where I now live we think coleseed a great improver of our lands on several accounts; for which reason we put it to many different uses: we feed bullocks, wethers, ewes, and cows with it: we plow it into the land for manure, and often let it stand for a crop of feed; which answers very well in general, as it yields well, and sells at a tolerable good price, for which farmers are fond of it*.

Almost every farmer has a different method of working his lands; therefore this crop is of course managed many ways; of which, before I give you any account, I must premise, that coleseed naturally loves a good, rich, strong soil, rather inclined to clay than any thing else; that it is a great drawer of land, and is very hardy.

Good wheat land is what I generally sow my coleseed on, to chuse; and of this I have plenty on a little estate I am possessed of in a neighbouring parish; the glebe of my own, which I occupy myself, not being so convenient for the purpose of sowing coleseed, though in other respects good land.

I lay it down as a maxim, that my land, of the nature above mentioned, cannot well be plowed too often, or brought into too fine a tilth for this plant, which, to answer well to the farmer, requires a great deal of nourishment; for the more luxuriant it is in its growth, the better for the owner.

For these reasons I seldom trust to the natural richness of the land, generally laying on a quantity of manure, of some kind or other, before I plow; and the nature of this manure is always regulated by my convenience, in consequence
of

* Of this seed is made the rape-oil, for which purpose an amazing quantity is cultivated in some parts of England; and the cakes, after the oil is expressed, are used for feeding oxen, and manuring land. O.

of which it often varies. In fact, I know of no manure, that is fit for the soil, but what will, in proper quantities, produce a great crop of coleseed; and this knowledge, confirmed by many years experience, it is makes me less nice in the choice.

I use, indifferently, rotten yard dung, lime, foot, and either coal or wood ashes: some of these, I say, I principally use for this crop.

When I make use of yard dung, I take care it is very rotten; or it is, I think, apt to breed slugs, which are great enemies to this crop*. I lay it on before the first plowing, which turns it in, the subsequent plowings mixing it with the soil, the whole of which is, by the action of the air on the salts of the dung, soon put into a slow state of fermentation; than which nothing more conduces to break and reduce a stubborn soil, such as that I am treating of.

When I make use of lime, by way of manure, I first cause it to be flaked in a large heap, with great care, that the fertilizing quality may not escape†; and after sowing my field, when the seed is harrowed in, I cause the lime to be immediately spread by hand, to the quantity of about fifty or sixty bushels on an acre.

In the same manner I manage foot, coal and wood ashes: of foot‡ I use, however, but twenty bushels; but of coal, or wood ashes, the same quantity as of lime.

I always plow the land in question in ridges, when I sow it with wheat; but for coleseed, I lay it in broad lands,

B 2

the

* Running a light roller over the land, when the plants are young, is a good remedy against slugs. R.

† The best way of flaking it for this use, is to lay it in a large heap, cover it with earth, and afterwards gently moistening it at the top, by pouring on a little water, the air, which is naturally moist, especially in the night, will do the rest of the business. A.

‡ We should imagine, if the quantity of foot used on an acre was encreased, it would be better; the proportion, when compared to ashes, being too small: perhaps it may be owing to its dearth. O.

the stiches being pretty high in the middle*. After the last plowing, which I generally give the beginning of July, the land is harrowed two or three times, to break the clods and bring it to a fine tilth: the seed is then sown, to the quantity of about three quarts on an acre, sometimes a gallon, especially if I have any reason to suspect the goodness of the seed, which I always try some weeks before, by sowing a little of it in a corner of my garden, and judge accordingly †.

When the seed is sown, I harrow the field once across, which is sufficient to answer the purpose of covering it; and for this purpose, though the land is stiff, I prefer a light harrow, for fear of burying it too deep, which a heavy, long-tined harrow, or drag, is apt to do.

When I have not a convenience of procuring a sufficiency of the above manures at a reasonable rate, which is sometimes the case, I fold my sheep on the land after it is sown, which I always find to be of the utmost benefit to the coleseed crop ‡.

When managed in any of the methods above mentioned, it generally turns out a very profitable crop, furnishing me with plenty of excellent feed for my ewes, cows, and wethers; and often in the winter season, when every other sort of feed is very scarce.

Before I proceed, I must however give one caution with respect to cows; which is, that it is the worst husbandry in the world to think of turning them into a field of coleseed, as they not only make great havock and waste, by treading down and breaking the stalks of the plants, but they are also apt to eat so greedily of the green leaf of this sweet vegetable, that they will, without care, hove ||, and in a manner burst and die.

My

* Coleseed will bear moisture better than wheat. R.

† This practice we have often commended: was it universally adopted, there would be fewer disappointments, and larger profits, in farming. E.

‡ We imagine our correspondent must mean, that it is in dry weather only, that he folds his sheep on the crop; because in wet weather their trampling would be apt to knead such land. E.

|| Swell,

My way, therefore, is always to cut off the tops of the plants, and give them to the cows, in cribs, or racks, under shelter; taking care to let them have, at the same time, some sweet hay near them, to qualify, in their stomachs, the cold, and perhaps, in some measure crude, though nourishing juices of the coleseed plant.

When I say I give my cows the coleseed plant under shelter, it must not be understood that I confine them in a cow-house; on the contrary, they are at full liberty to range all over the yards, and I sometimes let them into the home close*.

I do not, in general, chuse to feed my cows with this plant when it is old and rank, as it is then apt to give the milk, butter, cheese, &c. a bad taste: yet it has not always this effect; for sweet hay is a great palliative.

I have, by long experience, found that nothing is better for ewes, that suckle, than this plant, especially if a little caution is used in feeding them with it: with care it gives them plenty of milk, fats off their lambs, and soon makes the mothers fit for the butcher.

After what has been already said, it will be almost needless to add, that wethers fatten on it very speedily: some, indeed, have pretended to say, that it makes the meat of them rank; but I own, I never found but that it was at least as good as turnep-fed mutton, which the London consumers, in particular, seem very well reconciled to, and some even prefer to that which is grass-fed: how far custom may have vitiated their palates, I shall not, at least at this time, examine.

A friend of mine, who lives in Hertfordshire, tells me, that the farmers there, at least some of them who think they follow an improved practice, sow these seeds in their gardens, as they do cabbage-feed, in May or June; and when the plants have attained a proper size, they employ women and children chiefly to plant them out in the field,
allow-

* This practice we commend: no animal can enjoy a good state of health when debarred from exercise. R.

allowing every plant two feet square to grow in*. This, at first appearance, may possibly be thought a very dear way of going to work; but, if I am rightly informed, labour being dear there, they find it cheaper than sowing them broad-cast thick, as in the ordinary way, and having them afterwards set out, and the weeds destroyed by hoers.

Some farmers, who occupy light lands, which indeed are far from being proper for coleseed, are yet willing to benefit by this crop: these men, I say, particularly some in Surry, where the barley-harvest is early, plow up the stubble, and harrow in coleseed directly: this is not indeed good husbandry, yet the plant furnishes good feed for after Christmas and the spring, and so far turns out to profit.

Coleseed is naturally a very hardy plant, and will commonly outlive our hardest winters; but it must be observed, that what is sown on land that agrees least with it, *viz.* a gravelly loam, bears the cold better than what is sown on a stiff loam, or clay; owing, perhaps, to the natural warmth of the soil: the north and north-easterly winds do most damage to it.

I observed above, that I often dress my land, after sowing, with foot, lime, and coal or wood ashes: the use of these I greatly approve of; not only because they give a wonderful fertility to the soil, but because they are an excellent preservative against the race of insects that are the natural enemies to this crop; enemies I call them, though they are so far friends to themselves as often to eat it up.

In some places coleseed is, as I am informed, suffered to occupy the land in a manner two seasons, being fed down, though not too close, the first season, and left for seed the second.

Whenever I intend that this plant shall stand for seed, I have my land hoed as if it was under a crop of turneps, only I allow the coleseed more room, near two feet square, like the Hertfordshire farmers above mentioned, to each plant.

By

* This may be a very good way, when the land is in crop, so as to prevent its having the necessary plowing before the coleseed is sown, as some time may be saved by planting. E.

By this management I have my seed in much greater perfection, owing to the free circulation of air about the plants.

I judge of the proper time of cutting it, by the appearance of the pods: when they are all swelled and full grown, looking full, and some of them becoming dry, and the seed turning brown, I cut it with reaping-hooks, or sickles, as I would do wheat.

Should I leave my crop standing till all the pods were changed, a great part of the yield would be lost, as the seed is very apt to shed: this then is the reason of my cutting them green. They soon dry in the field, and may then either be threshed out of hand, which I generally prefer, or carried to the barn and threshed on the floor: I suppose it will be little necessary for me to observe, that if it is threshed in the field, it must be on a cloth.

My reason for preferring this last is, that I think the seeds, especially when the stalks are fresh cut, are more apt to be bruised on a floor, than on a cloth laid over a bed of straw.

The stalks of the coleseed plant, after they are threshed, serve me for fuel to burn under my copper when I brew, and to heat my oven.

A neighbour of mine, yesterday, told me that he had some land on which he now sows coleseed, of such a cold, wet nature, that he could not venture to sow turneps on it; for the convexity of the roots of these plants left holes in the land, which, receiving the water, made the soil so sour, as greatly to injure the corn that was afterwards sown on it. He also says he has often sown it on a wheat, barley, or pea stubble, without any other preparation than a single plowing, sowing the seed to the quantity of four or five quarts an acre and harrowing it in; and in this way he observes, he has sometimes encreased the quantity of seed to six quarts, which is the most he in general sows.

This is my neighbour's practice, who is a sensible, intelligent man.

I have

I have already noticed that I often feed my coleseed: this is done, in the general, in the months of January, February, and March; and in about a week after it is fed off, that is, suppose, the last week in March, or the beginning of April, I turn up my land to make my fallow for wheat; and if it happens to be a lightish loam, (on which I sometimes, though seldom, sow coleseed) and is in good heart, I give it another plowing, and harrow in some turnep-feed, which give me a forward crop, and are off the land time enough to plow it for wheat in autumn. In this last case, I never dung the land for the corn, and have generally a middling yield, and a sweet crop.

This is my way of managing, if my crop of coleseed is luxuriant, strong, and good; but if the crop is thin, and has not got sufficiently forward, I for the most part take care to get the land clear by some time in the month of November, sometimes by All-hollantide, when I plow it up, and give it a winter's fallow, in order to prepare it, and bring it into as fine tilth as possible for sowing barley in the spring, of which I have generally a large return in this husbandry.

Coleseed is a most excellent plant to sow where land is rich, and inclined to breed roguery*; for, if you sow it in the way I practise, and hoe it at proper times, the weeds will certainly be destroyed, and the land well broke and reduced by the tillage: if, on the contrary, you sow it thick in the ordinary way, the thickness of the crop will choak the weeds, and the leaves of the plants, by shading the land, will occasion in it a ferment, which will tend to divide the particles of the soil, before in too close contact, and meliorate it in such a manner as to be of more benefit towards bringing it to a fine tilth, than two or three plowings.

I own I am very fond of the coleseed, pea, and turnep husbandry.

A few years ago I had a piece of land, which was a good hearty loam, not too stiff, nor too dry. It was in wheat. As soon as the crop was carried, I turned in the stubble,

* Weeds.

stubble, and let it lie to mellow with the winter frosts: it happened the snow lay for some weeks on the ground that year, which greatly helped me.

In the frosty weather I carried on this land about forty loads of dung to an acre, which I took the first opportunity of spreading, and turning in.

Between September and April I gave this land four plowings, insomuch that in the spring it was like a well-kept garden.

About the middle of April I sowed in it, in drills three feet distance, the forward blue pea: these came up very kindly, and I took care to have them hoed at proper intervals, to keep down the weeds. My peas were off the last week in July; so I got my land ready by the first week in August to sow coleseed, over which I sowed forty-five bushels of lime on every acre, and it throve to admiration; so that I had a surprising crop, which yielded me a large quantity of spring feed.

In April I plowed it up and sowed turneps on it, which I fed off early enough in the summer to get the land ready for sowing wheat in the autumn.

My wheat, though I gave no more mending to the land than what I have mentioned, yielded me a good crop; and after winter-fallowing the land, I got, the succeeding summer, a very good crop of barley.

By this management, without hurting my land, I got, in the space of three years and a half, reckoning from the time I sowed my blue peas, five crops, and a winter fallowing; that is, a crop of peas, another of coleseed for feed, a third of turneps for my sheep, one of wheat, and a fifth of barley.

I shall not omit this opportunity of acquainting you with a remedy for the white scour in sheep, which I am the rather inclined to communicate, as I am informed that this disorder has now attacked many sheep in different parts of the country.

Take a pint of old verjuice; then take half a pound of common salt, or bay-salt is rather better; dry it before the

fire, bruise it in a stone mortar, and sift it through a fine sieve: when this is done, mix it by degrees into the verjuice, to which add half a pint of common gin, and bottle it up for use. When any of your sheep are seized with this disorder, separate them from the flock, and give each of them the value of three large table spoonfuls of the mixture for a dose, repeating it in two days afterwards, if they are not better. It is a great chance but this simple remedy cures them. I have often tried it with success; but you must mind to put them into a dry pasture, or all will be vain.

Now I am upon the subject of sheep, I must let you into another secret, which is, to kill ticks, or sheep-lice, that are so troublesome to this animal. Some sheep have been known to pull off almost all their wool when they have been tormented with this troublesome insect, and even, if they do not come to this height, the animal never thrives whilst it is infested by them.

For a cure, take half a gallon of soft water, dissolve in it a quarter of an ounce of sublimate, an ounce of cream of tartar, and a quarter of a pound of bay-salt, the two last being first pounded and sifted. When your sheep are troubled with ticks, let your shepherd part their wool, and moisten their skins here and there with this compound, which is reckoned, by many who have tried it, to be infallible when twice or thrice applied, and once often does.

Another very good way to preserve them from this pest, or cure them if the disorder is but incipient, is to wash them, after shearing, with some sea-water, or strong brine if you do not live near the sea*.

This washing is good for them in many other respects, preserving them from various disorders to which they are subject.

I have extended my letter to a much greater length than what I at first proposed; but I shall make no apology on the occasion, as, if it meets with your approbation, you will not object to its length; but if you should
not

* See Vol. I. Number XLVII. page 210.

not approve of it, the trouble of reading it will not be great, and you will, of course, *lay it aside*.

Let me add, to what I have said, that I sincerely wish you success in your public-spirited undertaking: a work of this nature was long wanting; but, permit me to say, it has now made its appearance to a great advantage.

I am, GENTLEMEN,

Borders of Berks,

Your humble servant,

March 1, 1764.

A COUNTRY RECTOR.

NUMBER II.

A Letter to the Editors, respecting an odd Circumstance happening to some Pigs put up to fatten.

GENTLEMEN,

I Have often heard it said, that experience makes a man wise; and I have not less frequently been told, that we may, with some degree of attention bestowed, learn wisdom from the experience of others.

It would be no small pleasure to me to contribute, though in ever so inconsiderable a degree, to the good of my country: this desire it is induces me now to trouble you; I mean, to communicate an accident that happened to me, which may serve as a caution to others.

To begin then, without farther preamble. A few years ago I bought, just before harvest, about a score of *chotes*, as we call them, or young porkers; which I kept, till harvest was over, on swill and grains. When the corn was all got in, I turned them into the stubbles, there to pick up the scattered leafings: I suffered them to range at large till the corn in the fields run short, and the weather grew cold, at which time I took them into my barn-yard, as I had just se a few men to threshing: here my pigs throve amazingly, insomuch, that by Christmas, or a little after, they were nearly half fat.

Seeing them in such good condition, I determined to put some of them up to barley-meal; and accordingly I pitched

on four of the best : these were confined in the sty, and as I visited them often, and perceived they eat heartily, I imagined they would thrive in like proportion, and soon be fit for the knife.

In this respect, Gentlemen, however, I was greatly deceived ; for they were entirely at a stand from the time of their being put up.

I waited with great patience for the first fortnight, thinking they might fret at being confined, or that the change of food did not so well agree with them ; but it was all to no purpose : three, four, five, and six weeks passed in the same manner ; and what most provoked me was, to see the pigs, I had left running in the barn yard, out-stripping them in point of growth.

Upon this, I ordered some of my men to take them out of the sty, one by one, and examine them carefully, to see if they had any disorder ; but this did not prove to be the case, they were sleek, clean, brisk, and, in appearance, in very good health.

Had this accident happened to some of my neighbours, they would certainly have pronounced them bewitched ; but, as I am not at all inclined to superstition, I did not.

As it is the opinion of us farmers, that whatever animal is stunted in his growth, never thrives to profit afterwards, I came to a resolution of killing them, but was determined, first to use my utmost endeavours to discover the cause of my disappointment.

I watched them narrowly for some days, till at last, getting up one morning rather earlier than ordinary, I saw one of my maids carry her coal-ashes out of the kitchen, and throw them on a large heap which lay next the pig-sty : when the ashes were cast on the top of the heap, the small cinders, which were mixed with them, naturally rolled down the slope, and a considerable quantity of them fell through the apertures of the enclosure into the little yard before the sty.

The pigs, which were at this time seemingly asleep, were roused at the rattling of the cinders against the wood, and,

and, coming out of the sty, to my great astonishment, made a hearty meal on the cinders.

This unravelled the mystery; however, to be perfectly satisfied, I watched them for two or three mornings more, and found them constantly at the same work.

The next day they were all killed, and I examined their intrails very carefully myself, to see if they were any ways affected; but, on the most minute inspection, I could not discover any token of disease: the heart in each of them was found and healthy; the liver of a proper size, a fine colour, and without knots; and the lights, or lungs, as they ordinarily are. The meat of them was remarkably white, took salt well, and what I roasted was sweet, tender, and full of gravy; but I dare to say, I do not over-do it, in asserting, that this pork cost me near nine-pence a pound; for the pigs, when they were killed, were not fatter than when they were first put up, and, to all appearance, were grown but very little in size.

I own it puzzles me much to account for this strange affair: I can very well imagine, that the coal-cinders, being a food quite unnatural to them, or any other animal, indeed, might prevent their growing fat; but I cannot conceive how it should have that effect only, and not act a little more powerfully, and cause them to fall off their flesh, as well as affect their health and inward constitution; yet this does not appear to have been the case, from the facts above mentioned, which are literally true*.

To judge from my simple reason, I should have imagined, that eating such a quantity of coal-cinders would have dried up all their juices, and have made the meat eat dry and chirky; and why this was not the case, I am far from being able to determine.

I should before have observed, that on asking the maid whether she had ever seen them eat cinders before, she said they constantly did it every day, but that she took no notice

* We should be obliged to any correspondent who would transmit to us his opinion with respect to the physical reasons for the cinders having this effect on the pigs. R.

tice of it, imagining they were not such fools as to eat any thing that would hurt them.

Though it is out of my power to assign any reason for the cinders having this effect on my pigs, yet am I certain that eating them was the cause of their not thriving. I found the cinders and barley-meal mixed in their stomachs, when they were killed; and in the smaller intestines the case was the same, except that the barley-meal had received the natural alteration; but the cinders were in the same state they were in when they were swallowed by the animals, being unaltered by digestion; at least they had the appearance of being so.

My reason for asserting, that the cinders were absolutely the cause of my disappointment, is, that as soon as these pigs were killed I caused the sty to be cleaned, the ash-heap to be removed, and four more pigs to be put up to fatten: these were fed with the same sort of food, *viz.* barley-meal, and managed exactly in the same manner: they throve daily, and in a very few weeks were fit to kill, being very fat; and they made excellent pork for family spending: it need scarcely be observed, that I had them carefully kept from ashes, cinders, or any other sort of trash.

If you think this hint worth communicating to the public, it will, of course, find a place in your collection; if not, as I rather take this trouble for the sake of my brother farmers, than from any desire of appearing in print, it will give me no uneasiness. Such as it is, you and the public are welcome to it; and my end is in part answered, as it has already filled up, I should hope not unprofitably, a leisure hour or two of my time. Believe me,

GENTLEMEN,

Your most humble servant,

Chelmsford, Essex,

Jan. 28, 1764.

A PURCHASER and READER
of your WORK.

NUMBER III.

A Letter to the Editors, containing Remarks on the Culture of Sugar-Canes, as now practised in the West-Indies; and on their Manner of boiling the Juice; from a Gentleman for some Time resident in those Parts.

GENTLEMEN,

THE observations on sugar-canes, in the first volume of your collection, No. LXXVII. page 321, brought to my memory some things, which appeared to me improper in the management of that article, when I was, some years ago, in the West-Indies.

With relation to the culture of the sugar-cane, I entirely agree with your correspondent, in recommending the planting of the canes at a distance from each other. Whoever reads, attentively, M. de Chateauvieux's experiments in the horse-hoeing husbandry, either in M. Du Hamel's original, or in the translation, will be fully convinced of the propriety of cultivating the sugar-cane in that way. Those experiments have, alone, thrown more light upon the subject than all that was written before or since; and therefore they cannot be too strongly recommended to every class of cultivators, as well for their judicious diversity, and his apposite reasonings on them, as for the number and variety of the plants which he cultivated in that way.

Three feet between the plants in the rows* seems a very considerable distance; yet I will not take upon me to say it is too great; but I think that on every bed, or between every larger interval, two rows might be planted, at perhaps two feet distance from each other; the plants standing, in the one row, opposite to the middle of the space between the plants in the other. The weeds between these rows might be easily destroyed by hand-hoes, while

* See page 324, Vol. I.

while the intervals of six feet, or the alleys betwixt the double rows, are kept clear, and constantly in a loose state, by the horse-hoe.

I would recommend the horse-hoe for this purpose, on a double account ; first, because it is incomparably less expensive than the labour of negroes ; and, secondly, because the earth will be stirred thereby to a much greater depth than is commonly done by hand-labour.

The great advantages of this method cannot, perhaps, be conceived, till they have been demonstrated by actual experiments ; because, by means of the horse-hoe, the mould can be kept in a loose state to the depth of fifteen or eighteen inches ; which is at least double of what is effected in the common way.

To those who are not acquainted with the good effects of the horse-hoe, the keeping of the earth thus loose may seem an objection ; because, according to the common-received opinion, its moisture will be exhaled by the hot scorching vertical sun.

M. de Chateauvieux's experiments demonstrate, that the horse-hoe had the most sensibly good effects in the hottest and driest weather ; because the dew, which falls plentifully in such weather, is absorbed, and sinks so deep into the loose mould, that the sun does not exhale it.

The advantage of so deep a mould, to so juicy and luxuriant a plant as the sugar-cane, must be very great ; especially as the plant, above ground, thrives in proportion to the extent of its roots.

Never having been in North-America, I do not know whether tobacco is cultivated in the horse-hoeing way : if it be not, surely it might to advantage.

The censure I at first hinted at was with regard to the West-India method of boiling the juice of their sugar-cane.

In order to have a greater heat around their coppers, or boilers, they cover as little of them as possible with the bricks in which they are set, that so the flame may play round a greater portion of them, thereby to encrease the heat.

In this they judge right, were the boilers to be kept always full; but as the watery part of the juice evaporates gradually, it soon sinks below that part of the boiler which is set in the bricks. Now it is known that no containing vessel can receive a greater heat than the contained liquor is capable of receiving. Thus, a copper in which water is boiled will not receive a heat greater than that of boiling water: but if any part of the copper, not filled with water, is exposed to the fire, that part will become as hot as the degree of fire can make it. The water which touches it in this state, instantly flies off; and if there is any animal, or vegetable substance, mixed with the water, which is not so volatile as to fly off, it is in some degree burnt, so as often to have its texture destroyed. Thus in the juice of the sugar-cane, the saline or saccharine particles, which touch any part of the boiler that is so hot as to destroy their texture, are thereby lost to the view of making sugar, and cannot be brought to a saline form by any future process.

It is known that when any substance is imperfectly burnt, it becomes black, owing to its oils being, if I may so say, singed, though not perfectly consumed. Hence it is, that whatever saccharine particles touch the greatly-heated boiler are turned black, and form what is called molasses, which is in fact a loss of so much sugar as serves to give it that sweetness and consistence.

Were the planters careful enough to avoid this error, a considerable loss might be prevented; and the sugar made would be of a much whiter colour, because it is these burnt particles which render it of a dark brown, and give it a burnt taste.

It is from the same cause, *viz.* some particles in the liquor being burnt by the stills becoming red-hot in distilling, that rum, in particular, often has a burnt taste.

In order to separate from the juice every gross or glutinous particle, which is not of a saccharine nature, it might not be improper to purify the juice, by the mixture of whites of eggs, or some other like substance, before it

is put over the fire, which, by carrying the impurities up to the surface, as it approaches boiling, enables the person who attends to skim the whole of them off, just as the liquor begins to boil.

I am of opinion, that in works in which evaporation is the object, as for instance, in salt and sugar works, there is not sufficient care taken to carry off the steam that rises from the liquor which is to be evaporated. My reason for thinking so is this.

It appears from experiments, that air is a kind of sponge to water, of which it can contain only a certain quantity; and that quantity different, according to the different weight of the atmosphere. But the limits which I have prescribed to myself will not permit me to enlarge on this subject*. Supposing, therefore, at present, the fact to be so, it seems adviseable to convey away the steam arising from the boiling liquor as fast as it rises, in order that fresh air, not yet saturated with water, blowing in, may carry the steam off the more expeditiously. Where the steam is suffered to play over the surface of the boiling liquor, it is probable that much of it falls back, which might thus be carried off.

What has perhaps prevented a due attention to this circumstance is, that water boils more strongly when the air is confined. The ebullition here arises from the difficulty with which the water escapes; but as the heat rises equally from below, however the surface may be exposed, it may be presumed, that the more freely the air and steam are carried

* We are greatly obliged to this gentleman for the favour of his letter, and should be glad to hear from him again when occasion serves. As the subject he has now treated on, is in itself important, he would oblige us much by entering upon it more at large, and giving us his opinion with respect to the manner by which the sugar planter may be enabled, in the evaporation of the juice, to enjoy the greatest benefit that is possible from the proportion of fire allowed, yet not hazard the goodness of the future commodity by burning or singeing the inspissated liquor in the action of boiling it. R.

carried off, the sooner the liquor evaporates, and the more speedily the intention is answered. I am,

GENTLEMEN,

Your humble servant, &c.

N U M B E R IV.

To the Editors of the MUSEUM RUSTICUM, &c.

GENTLEMEN,

IF the following *observations on the cause of smut in wheat, with a practical cure*, be deemed worthy a place amongst your select papers; you have, for the publication thereof, the consent of the observer,

RURICOLA GLOCESTRIS.

L.

The smut in wheat is an evil which has long been complained of, and many methods tried to prevent it, all of which have proved ineffectual, or, at best, but a mitigation of the disease; which methods I need not here enumerate, as they are generally known, or are to be met with in various authors who have wrote on agriculture: some of them being calculated to forward vegetation, and strengthen the plant, such it will be adviseable to continue in the practice of.

But amongst all the authors who have wrote on this subject, I don't remember to have seen one who has pointed out a probable conjecture with respect to the cause of this malady, so as to be supported by any tolerable degree of reason. And inasmuch as natural history has been, and is my favourite study, (of which I take agriculture and a knowledge of cattle to be no small part) I have frequently employed some leisure hours, to endeavour to assign causes for various diseases, to which the productions of the earth are subject; among which, this of smut in wheat is one. And being desirous to improve my knowledge, I am willing to communicate, that if any thing worth notice might come

from me, I may have the pleasure of doing something for the public good, and thereby induce others to make their discoveries known, from which myself, as well as many more, may reap some advantage.

I remember to have read a little treatise, wrote some years since, by James Logan, (chief justice, and president of the council, of the province of Pennsylvania) on the generation of plants, containing observations made on the maize, by which he discovered that plant to be (what *Linnaeus* calls *Monoecia*, or) a plant bearing male and female flowers, and, as such, capable of being impregnated with a fructifying dust from another plant of the like kind.

I own, the reading this pamphlet first gave me the hint of the generation of vegetables, from which I continued my observations respecting other plants, and among the rest to wheat, and the like; though this is not of the same class with maize, but of the class *triandria* of *Linnaeus*, and is hermaphrodite, yet, nevertheless, equally subject to be impregnated by dust from another plant, as well as with dust from itself.

Having frequently observed amongst wheat, while green, (though shot up into spindle) several black, blighted ears, I examined them, and found these were ears in which, by some accident, the intention of nature was prevented; I suppose, by being detained too long in the hose, and by the natural humidity of the plant, a fermentation promoted in its ear, destroying the small vessels through which the corns were to receive nourishment; by which means their contents became black, dry, and dusty: these ears, growing up with the others, imbibe moisture sufficient to cause the dusty particles in the grains in them to expand, and burst the fine skin which contained them: being thus set at liberty, the air, if it happens to be a dry season, dries them again; by which means they become light enough to float therein, when separated from the skin which held them. If this happens when the wheat is in blossom, which it often does, part of this dust enters the stygma of healthy corns, and thereby infects them: the pulp in those becoming

coming black, a fermentation is raised therein, which destroys the life of the grain thus impregnated : hence the disagreeable smell is acquired peculiar to this disease (the smell in a grain of smut being the same as in a black blighted ear).

From hence it is easily accounted for, why, often, a few grains in an ear are smutty, and the others good.

Some may perhaps object, if this be the case, why are not barley and oats subject to the like disease, since both these are subject to the black blight as well as wheat? Such objectors would do well to observe, that these have a more tough skin than wheat, which does not burst till after the blowing of these sorts of corn is over ; therefore, when it does burst, the dust can do no harm.

Having thus pointed out the cause, I now proceed to prescribe the remedy, which is, when the corn is shot into spindle, and the ears begin to appear, let some persons go along each furrow in the field, and carefully break off all ears of the black kind, (not pull them up, because often from the same root grow several others, which are good and sound ears) and when broke off put them into a bag, and carry them away ; for should they be thrown on the ground, there may still be danger of infection from them ; and as, 'tis possible, there may be some of these diseased ears, which are not bursten, and therefore may escape being gathered, these may be known by the stalk at the neck being crooked, and bent in the length of three or four inches backward, and forward five or six bends, and the hose nearer to the head of such than the ears which are good.

The seasons in which wheat is most liable to be smutty are, it is well known, such in which it happens to be dry weather and windy at the time of blowing ; but if it happens to be wet during that time, it is very rare to see a smutty ear in a field.

N. B. In Vol. I. No. LXXXV. *particularizing several tokens of coals being on an estate*, please to correct the following errors of the press: page 378, line 13, instead of
4 *between*

between the north and south eastward, read between the NORTH and SOUTH, EASTWARD; and in the same page, line 24, read NORTH and SOUTH, WESTWARD.

NUMBER V.

A Letter to the Editors, on some Improvements necessary in the Art of Bleaching Linen Yarn.

GENTLEMEN,

HAVING lately met with your *Museum Rusticum*, &c. which I look upon to be a very entertaining and necessary work, for communicating useful knowledge from one part of the kingdom to another, upon the most important improvements of this nation, viz. agriculture, manufactures, &c. I am persuaded it cannot fail of being well received by the industrious and sensible part of mankind.

As I apprehend, there is one material branch in our linen manufacture which wants improvement, and which I should be glad to see treated of in your valuable collection, that is, the bleaching part.

Our bleachers, in this part of the country, often keep the linen and cotton yarn a double time, to what is necessary, in the bleach-field, to the great detriment of the manufacturers, not only in the length and loss of time, but in weakening the yarn, by lying so long upon the ground as, at some seasons of the year, to make it very tender and weak*: now, if our skilful bleachers would favour us some times

* We agree with our correspondent that it is very possible to leave the yarn so long in the bleaching-grounds, as greatly to hurt its quality in point of strength; but we apprehend that the time it should be exposed must depend not only on the texture of the yarn, and the use for which it is intended; but also, in a great measure, on the season of the year, and on the weather; so that, after all the rules that can possibly be laid down in the article of bleaching, there will still be a great deal left to be learned, which experience, constant observation, and a continued reflection, can only teach. E.

times with their thoughts, and give us a few useful hints in this article, it would very much oblige many of your readers. But the difficulty will be to bring this to bear.

Suppose the honourable society for encouraging arts and manufactures, &c. were to offer premiums for bleaching linen and cotton yarn, &c. (as they have done for dying, and many other things) and oblige those that receive these premiums, to publish to the world their method of bleaching; we might then, perhaps, see some of our ingenious bleachers take the hints that might be offered; and not only so, but they might, possibly, also favour us with their thoughts and experiments in return; by which means this knowledge would be circulated among us, to the great benefit of the nation in general, and our manufacturers and bleachers in particular.

But as our coarse linen and cheque manufactures do not require the yarn to be whitened to the full extent of whiteness, that it is capable of being brought to; were some premiums offered for that which was bleached in the shortest time, and kept the strongest, and done at the lowest price, to a reasonable degree of whiteness, it might answer very well for these manufactures; and for cotton and fine linen yarn, to such as was the whitest and strongest, it might be of great service to our cotton and fine linen manufactures: and were the society to require a certificate from the owner, or master of the yarn, with every sample that was produced, of the length of time it had been in bleaching, and the price given for that work; they would then have before them the various manners of working, and the prices, and might afterwards judge as they thought proper.

But it is not for me to direct so honourable a society; they stand in no need of my advice: I only offer a few hints, being my thoughts upon an article which would be both useful and entertaining to many of your readers, and particularly to

Manchester,
Feb. 14, 1764.

Your humble servant,

AN INTENDED READER.

NUMBER VI.

To the Editors of the MUSEUM RUSTICUM.

GENTLEMEN,

SINCE the first Number of your *Museum* fell into my hands, which was soon after its publication, I have been a constant reader of them all, and cannot help thinking them the most useful undertaking of any thing we have in the English language; for you have mixt the *utile dulce* most delightfully together. 'Tis a work that has been long wished for by those who are real friends to agriculture, and a country life, who are not ashamed to drop old opinions (however they may be sanctified by antiquity) to take up others of a more modern date, that may tend to more ease and benefit. This, I presume, Gentlemen, is the plan of your laudable *Museum*.

I should have turned your correspondent much sooner, if you think me worthy one now; but was unwilling to declare my mind before I saw a few more Numbers: the more I read, the more I liked, which was not common with me in regard to other periodical publications; for, whether it be owing to a want of learning, good sense, or taste, I have never entered upon the taking a periodical paper for these ten years last past, but I heartily repented of it: your *Museum*, indeed, makes great amends for the time we have lost in reading others; for however fair and good they promised at first going off, they shamefully jaded and tired before half the journey was completed.

As perfection is not, nor can be the gift of man, however some may lay claim to a fullness of it, I must be so free with you, Gentlemen, as to think your *Museum* wants something to be amended in it, to be of more general utility and satisfaction. I always thought that it was from errors all our excellence proceeded; and, give me leave to point out to you the chief, and only one of consequence in your work: it cannot, indeed, be called your's, so much as your correspondents;

spondents; but it certainly belongs to you to rectify it: it is this; however well we may explain our thoughts upon paper, to our own satisfaction, we cannot always be sure they will be construed in the same light by all those into whose hands your *Museum* may fall; especially if there be the least room for a doubt, or a wrong construction. For instance, the words *discretion* and *well-timed* are made use of by some of your correspondents: there are various degrees of the first word, and who can so well hit on the medium, as those who have tried the most? Discretion may make the most sensible man act either under or over, without long practice; and as for the meaning of the word *well-timed*, it is to be acquired only by experience, so that a beginner is entirely to seek*.

Your

* We thank this very sensible correspondent for the favour of his letter, and hope often to hear from him, as we cannot but think him capable of furnishing our collection with some observations of real value. We must not omit acknowledging the proper sense we have of the many praises this gentleman is pleased to bestow on the *Museum Rusticum*: if any merit is *our* due, it must arise from the desire we have to do good to our country. As to what our correspondent mentions with respect to our explaining, in the notes, the obscure or indefinite terms and expressions which may occur in the pieces sent us, we can assure him that such was our original intention, as we thought principles intended to govern practice could not be laid down in too plain a manner: we have often done it in the course of the first volume; but many difficulties were to be encountered, and what may seem strange; yet is no less true, is, that some gentlemen have taken offence at our attempting to explain any passages in their letters, or seeming to dispute what was merely matter of opinion. This it is has occasioned our not having been, at all times, so explicit as we at first intended; and to this must be attributed any seeming omissions on our part. But our ingenious correspondent must reflect that the words *discretion* and *well-timed* may often with propriety, even in a work of this nature, be used. It is our desire, that such gentlemen as favour us with their thoughts should avoid obscurity; yet were they to enter into too minute details, their pieces would, in general, appear so tediously long to the intelligent reader, that we could not, consistently with our plan, give them a place in this collection, as they would be a means of precluding that

Your work seems to me to be for a general use, but more so for the farmers than any other set of men: we cannot think that every farmer, who rents one or two hundred pounds a year, is acquainted with Greek, or Latin; or that they are a class of men of the quickest understanding and thought: in general they are otherwise, though still men of good sense at the bottom; therefore require everything to be laid before them in the plainest and easiest manner, so that they may have no room to doubt, or perplex themselves with errors.

This, Gentlemen, I think, should be your task, in your notes and remarks upon each letter; for, in my humble opinion, it is a matter of no little consequence to your plan, as it may prevent many mistakes, and failures of some material trials.

If you think what I have said worth your notice, please to give it a place in your *Museum*; if not, you shall not hinder me subscribing myself

A friend, and a lover of your undertaking,

Isle of Ely,

G. B.

March 3, 1764.

variety which, in a great measure, constitutes the utility of the *Museum Rusticum*. It is true, some young beginners may be at first a little at a loss; yet, we flatter ourselves, this can be no great inconvenience, as we are apt to think that few passages occur in this work, but what may easily be explained to them by more than one person in every parish in the kingdom. It is impossible to lay down maxims so much at length as to be intelligible to every capacity; but we shall take care, when any real difficulty occurs, to explain it; and if at any time we fail doing it, our candid readers must conclude that such omission is only occasioned by our apprehension of disobliging a correspondent. We have often declared that we think ourselves by no means answerable for the opinions advanced by such gentlemen as favour us with their pieces: we beg leave to repeat it in this place; and to add, that as by the plan of this work, it must necessarily be open to all proper and useful communications, a candid refutation of what is only matter of speculation, or opinion, will always be readily admitted.

NUMBER VII.

A Letter to the Editors, respecting the Treasures found in the Bosom of the Earth.

GENTLEMEN,

YESTERDAY I happened, for the first time, to meet with your four Numbers of the *Museum Rusticum et Commerciale*. I carefully perused every one of them, and in a minute-book, which I keep, digested those things which I thought most worthy of notice.

I rejoice to see so laudable a performance carried on with spirit, and encouraged by able and experienced correspondents, and can assure you, from my own knowledge, that it will be of great service to this country.

In No. III. (page 170.) of your work I find a letter, signed *A Londoner*, by which I apprehend, that the gentleman has a little estate, (perhaps in Middlesex or Kent) where he flatters himself with the hopes of finding a coal-mine, a thing much to be desired in that part of the country.

As to his taking a journey into the north, with an intention, of learning something from the converse of the viewers, and of examining the nature of the soil, stones, &c. I don't at all wonder that he should return unsatisfied, for very few people choose to communicate the secrets of an art which they have laboured indefatigably, for twenty or thirty years, to obtain. I entirely agree with him, that the person he employed was not *sufficiently* communicative, though his saying that he was sure coal was in the estate was saying very much; and, by the hints given in the letter, I have reason to believe, that he was a person not contemptible for his knowledge in mineralogy.

I have myself had a long experience in these matters, and have scarcely ever been out in my judgment; therefore, if any of the southern gentlemen choose to employ me, I'll let them know the conditions upon which I can make

experiment, on their sending you a letter to forward to me according to the inclosed direction.

'Tis much to be regretted, that gentlemen are not more curious in researches of this kind, when it has so often happened, that within the compass of one acre (beneath the surface) a gentleman has more riches than in a thousand acres above ground.

I have known more than once, that from one single acre above thirty thousand pounds sterling, clear profit, has been got, and this mine perhaps discovered by mere accident: but who would depend upon chance, when they may have their grounds tried by me to a considerable depth, for so small a sum as sixty or seventy pounds?

I would humbly recommend to the society's consideration, the encouraging researches in the subterraneous kingdom of minerals and fossils; for these open a spacious field for the improvement of trade and commerce, even from gold to the very dirt which we tread beneath our feet.

We need not be at a loss for an example. The Hollanders, in their manufactures of Delft ware, have shewn us what a valuable branch of trade the pottery is. The Dresdeners and Chinese in the works of porcelain do the like. Thus we often import a great many expensive things (which are dug out of the earth) from foreigners, only for the sake of saving ourselves the trouble of searching for the same at home.

I hope you will pardon the trouble of this letter* from an intended correspondent. I beg leave to subscribe myself

Tyne, Northumberland,

S. T.

Feb. 4, 1764.

* Our correspondent will, we dare say, excuse our omitting the *vision* inserted in his letter, as our reasons for so doing cannot but be apparent to him. We should be glad to hear from him on some future occasion. E.

NUMBER VIII.

Further Observations on Mowing of Wheat, in a Letter from the Rev. Mr. Comber to the Editors.

GENTLEMEN,

I PROCEED to give you my remaining observations on mowing of wheat*.

Your correspondents on this subject, and yourselves, seem to apprehend, that the main obstacles to the reception of this practice will be, first, the inveterate custom of shearing it; and, secondly, the apparent difficulty of gathering the corn when mown towards that which stands.

But I can give them and you pretty good assurance, that these obstacles are not so considerable *in reality*, as they *appear*; for, though it must be acknowledged by every attentive observer, that farmers in general are an obstinate race of men, (a fact which is no wise wonderful, when the narrowness of their education, the danger of ruin to many of them by new experiments, &c. are considered) yet it must be equally acknowledged, that our *English* farmers have much more reluctance to imitate the examples of *foreigners*, and especially *Frenchmen*, than their countrymen.

If then mowing of wheat be upon the whole an eligible practice, our farmers will be much more easily brought to it, by shewing them that it is followed with success among a considerable body of their *English* brethren, than by directing their attention to *M. de L'Isle*, and the inhabitants of *Hainault* and *Brabant* †; and then, if any
real

* See Volume I. Number CI. page 437.

† Our correspondent's argument is certainly well founded, for which reason it will be expedient for the society to procure some mowers from the wolds in Yorkshire, that a fair trial may be made of the English and foreign ways of mowing wheat. R.

real advantage be found in the peculiar manner of these *foreigners*, above that of *Englishmen*, it may easily be adopted.

In my former letter I just observed, that all the corn, which grows on that vast tract called the *Wolds*, betwixt *Malton* and *Beverley*, &c. is mown; the quantity there being so great, that it would be impossible to find hands sufficient to *shear* it.

And in all the tract of corn country around me, though we *rarely* mow wheat or rye, and never except when it is a thin crop, yet we almost universally mow our barley and oats.

As to the obstacle which seems to arise from the mowing towards the standing corn, I can also inform you, Gentlemen, that both on the *Wolds*, and in this woodland country, this* method of mowing is practised with success.

That sensible gentleman farmer, whom I mentioned in my former letter, informs me, that it is (so far as his knowledge extends) *universally* the practice to mow towards the standing corn, when the farmer intends immediately to sheaf his crop; and as universally, to mow the contrary way, when he proposes to let his crop lie in swathe some time.

The reason of these opposite methods is very obvious and satisfactory, *viz.* when the crop is fully ripe and clear of weeds, 'tis proper to mow inwards, and sheaf it immediately; but when it is full of weeds or grass, it must have time to die; and the opener it lies, the better; at least, if the weather be good.

The above-mentioned gentleman farmer is of opinion, that when all the advantages and disadvantages of the two methods of reaping, *viz.* by the scythe and the sickle, are well considered, the latter is the *neater* and *preferable*, provided that work-people can be got at reasonable rates.

I must now, Gentlemen, observe to you, that, though it seems scarce possible to gather the crop so neatly after
the

* The method of mowing wheat in Yorkshire greatly resembles that recommended by Mons. de L'Isle, so that it will be very easy to judge of the comparative merit of the two scythes used in those methods. E.

the *mowers* as the *shearers*, yet in all this country we have an instrument of repairing this comparative loss in the methods, which, as neither your correspondents nor selves mention, I shall here take notice of, though it is well known. This is the *swathe-rake* * ; a rake about two yards long, with iron teeth, and a beam in the middle, to which a man fixes himself with a belt ; and when he has gathered as much as his rake can hold, he raises it, and begins again. The rakings, thus drawn into swathes across the lands, lie till they are somewhat dry, and then are heaped and led home. By this means very little of the corn is lost by mowing, unless the weather prove bad, and it be trodden into the ground. I must further observe, that when we mow corn, and especially wheat, the gleaners † are not permitted to come into the ground, before the *swathe-rake* has passed, and the rakings are heaped and led.

It remains now, Gentlemen, to be enquired, what are the comparative advantages of the methods of mowing with the *Hainault* or *Brabant* or *Yorkshire* scythe. For this end it seems very desirable, that the society should order experiments to be accurately made with all these scythes, and carefully reported, all circumstances being as nearly the same as possible in all of them. I mean that the soil, strength, and portion of the corn, should be strictly regarded, and that the foreign and domestic scythes should be first managed by persons best acquainted with their use, and then by persons equally unacquainted with both ‡.

In

* This instrument is in some countries called a *down-rake*, and is used, particularly in Essex, for gathering barley after mowing.

† Gleaning is become such a nuisance in this part of the world, and people make so much more of it, that is, of *stealing under pretence of gleaning*, that they prefer it to working; hence the advance of work-people's wages. I am credibly informed, that one person in this last harvest sold eight quarters of barley *gleaned*, as it was called ; and I was told yesterday, that these gleaners will stone the owners of the lands off their own premises. COMB.

‡ The greatest part of these experiments, if not the whole of them, will certainly be made next harvest, when we hope to communicate to the public the result. E.

In the mean time, Gentlemen, I must confess, that I cannot see any advantage in the foreign scythes, superior to what our own may justly claim. However, I am ready to allow, that advantages may attend the *practice*, which cannot be perceived in the *theory*.

I would add a circumstance or two, which seem much more favourable to the *English* than *foreign* method.

1st, Our gatherers use a rake, which from this use derives its name, and appears a much properer instrument to collect the cutten corn, than that instrument which the foreigners use instead of it, as represented in your plate.

2dly, Instead of the double *bow* or *boot*, annexed to the lower part of the foreign shaft, our mowers use one longer bow or boot, of hable, willow, &c. bound to the shaft, with two or three pieces of inkle, which both make the bow firmer, and a more secure bed to save the cutten corn from falling through.

3dly, The using two handles at a moderate distance from each other, as in our grass-scythes, seems a much more convenient position of the hands, and consequently the body, than the foreign method allows.

Let me add, 4thly, That the fixing of the *strickle* or *whetstone* at the extremity of our shafts gives a very advantageous balance to the whole machine; whereas (according to the observation of that sensible gentleman farmer above mentioned) in your plate appears no place marked for this strickle, without which, essential to every mower of grass, the mower of corn can still less proceed.

I must add, “ That in all cases, where no good reasons
“ can be given for a change, there is a good reason for
“ making none; *viz.* the inconveniences which attend all
“ changes, from the prejudices and ignorance of the per-
“ sons concerned.”

This excellent axiom holds good *full as much* (if not more) in mechanics as in *divinity* and *politics*; for, as much depends upon expertness, and this is very gradually obtained, the advantages even of a better machine may be *greatly overbalanced* by the inexpertness of him who uses it. If therefore the *foreign* scythes be proved *equally good* with

our

our *English*, though they may be reasonably recommended to those who yet use neither, they cannot with equal reason be recommended as substitutes to our *Yorkshire* ones *.

I have now, Gentlemen, finished all my observations on this subject, except some cautions necessary to be marked, with respect to the gatherers in either method of mowing of wheat, or any other corn; but these, with some remarks on the prices of work-people's wages in the different methods of reaping, (*viz.* shearing and mowing) as connected in some measure with this subject, I reserve for a future letter from,

GENTLEMEN,

Your obedient humble servant,

THOMAS COMBER, *Junior*.

East-Newton, near Malton,

Jan. 20, 1764.

N U M B E R IX.

A Letter to the Editors, on the Advantages of mowing Wheat, and on a Method of stacking Corn in the Field, so as to preserve it from being damaged by Rain.

GENTLEMEN,

ON the banks of the Rhine, almost all over Flanders, and lately in France, they mow their wheat with a *scythe*, instead of reaping it with a *sickle*, because it is better and more easily performed, and at much less expence. A good reaper in France will cut six tenths of an English acre in a day; a good mower will cut an English acre and a half in a day.

The reaper leaves stubble six or eight inches high; the mower leaves his stubble but two inches high, by which he gains more straw.

In France, to reap 112 acres of wheat, English measure, with a sickle, they commonly allow 10 men 20 days; that

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F

is,

* It is not intended to recommend the foreign scythes to such as now mow their wheat, unless they should prove much superior to those they use. R.

is, 200 days to one man. To cut the same quantity of acres of wheat with a scythe, they allow 7 mowers and 7 binders 10 days, equal to 140 days of one man, by which they save 60 days work.

Besides that the binders have less wages than the mowers and reapers; for the binders are children of 12 or 15 years of age, old women, and men not able to stand hard work: the mower therefore does three fifths more than the reaper.

The different postures of the mower and reaper are to be attended to. That of the former is much the easier, and his hands are not so much exposed to thistles, nettles, &c. and when wheat is mowed, the corn sheds less.

And as the mower can dispatch his business in so much less time, that method is more peculiarly serviceable in an *uncertain* and *catching* season.

'Tis to be observed, the mower of oats has always the standing corn on his right hand, and the corn cut on his left; on the contrary, the mower of wheat has the standing corn always on his left, and the corn cut on his right.

The mowing wheat is more particularly useful where the ground does not lie flat, but is raised in ridges or lands, as is generally the custom in Northamptonshire; and also in *rainy* seasons, for the ear will not be so apt to shoot.

The straw indeed, as being in a greater quantity, is more difficult to thresh; but then the additional straw sufficiently pays for that labour.

And after the wheat is mowed, the grass sooner grows up again, and the stubble does not prick the nostrils of the cattle, as it does when it is reaped.

'Tis true, the scythes used are of a different form from those commonly used in England; the blade of every one of them is six inches shorter than that of the English scythe.

The Brabant scythe rests on the inside of the shoulder; the Hainault, on the lower joint of the arm, and sometimes on the thigh; 'tis the most like the sickle of any. The French is a direct cradle-scythe, only the handle is quite strait.

These

These three scythes are deposited in the machine-room at the house of the society for promoting arts, in the Strand, London, where they may be seen; and a trial was made of them last harvest, in Northamptonshire, when the advantages of them, particularly that used in Hainault, were evidently proved.

Now when the crop is cut, it may not be amiss to shew how it is stacked, to preserve it from the wet, in which situation it may remain in the field six weeks, or two months, without any danger from the inclemency of the weather.

They set one sheaf upright with the ears uppermost; and round that they place a circle of many other sheaves, with the ears uppermost, inclining on the first sheaf; and when so placed, they look like the figure of an extinguisher.

Then they lay an horizontal circle of sheaves, with all the ears in the centre, and they cover those ears in the middle with a loose sheaf or two.

Thus placed, they are protected from all wet, and may remain in the field six weeks, or two months, as safe as they would be in a barn; and this method of stacking has been adopted in Sussex, Surry, Kent, and many other southern counties, to the great benefit of the farmers and the public.

I am, GENTLEMEN,

Your humble servant,

Y. Z.

N. B. The French arpent, or acre, according to Mr. Greaves's calculation, consists of 100 perches of 22 feet each, making in all 48,400 square French feet, and is equal to 51,691 English square feet, or 1 acre, 29 poles, 9 paces, 1 yard and 2 square feet and a half, that is to say, to very near an acre and 3 quarters of a rood, English measure. The French measure is, according to this proportion, reduced, in the account above, to the English measure.

NUMBER X.

*A Letter to the Editors, on Cyder-Fruit and making Cyder,
from a Herefordshire Planter.*

GENTLEMEN,

MY purpose is to employ, profitably I hope, a few hours in giving you the result of many years experience in the affair of cyder.

I leave it to the vale-country farmers to write on the best method of cultivating wheat: the Kentish men know most with regard to what relates to hops: and as to what relates to barley, malt, &c. the Berkshire and Hertfordshire farmers will, I suppose, of course be your correspondents; some of them, I see, already are so.

I have chosen cyder for my subject, which some of your readers will, perhaps, say can be of very little use, as, since the tax laid on this liquor has taken place, it is not worth a farmer's while to make it. But I still have my reason for chusing this subject: I am apt to think, it is true, that a great deal less cyder will be made on account of this tax; therefore I suppose, that when the legislature finds the amount of the duty or excise not to pay the charge of collecting it, they will of course cause the act to be repealed, and we shall then make cyder again as heretofore. I should, indeed, have said our sons will make it, for it will scarcely happen in our time, at least in mine, as I am already an old man.

Since this is the case, I say, it cannot be improper to register a few maxims, for the use of our posterity, who, if we leave off making cyder, cannot have the benefit of experience; and oral tradition will be, at best, but imperfect.

These,

These, then, are the motives which induce me to write at this time on this subject ; and without farther ceremony, with your good leave, I shall proceed in what I have to say.

The worse the apple is for the table, the better it is, in general, esteemed for cyder, such as grow all over this county, and are, in a manner, wild, harsh, and crabbed to the taste. These go under various names, as the *red-streak*, the *white* and *green musts*, the *gennet-moyl*, the *stocking-apple*, the *summer* and *winter fillets*, &c. &c. of all which I prefer the first, provided it is a good sort, which is not always the case, particularly in some parts of *Worcester* and *Gloucestershire*, where they grow in great plenty.

I have long laid down from experience, the best mistress, that, first, the more red an apple has in its rind, the fitter it is for cyder ; that is to say, if it is at all fit ; for I have seen an apple of very deep red, by some called *soppy-wine*, *quasi* sopped in wine, which was worth nothing in this intention.

Secondly, That the paler the rind, the worse the juice.

Thirdly, I have found it a maxim in general true, that a sweet apple with a tough rind will always yield a good vinous liquor.

Fourthly, The more yellow the flesh of the fruit, the better and finer coloured will the cyder be.

These few maxims, not too scrupulously adhered to, have been of great service to me in life ; for though I have a high opinion of them, I do not absolutely rely on them.—There is no rule so general but an exception may be made to it ; but a man of reflection, with a few well-founded rules, will seldom be at a loss how to act in this, or in any other case.

I seldom suffer my apples to be gathered till they begin of themselves to drop from the trees: nature then tells me they have, for the most part, acquired a proper degree of maturity.

Great

Great care is taken in the gathering of them, for fear they should be bruised in the operation; and this I have always found a very necessary precaution.

As they are gathered I have them sorted, according to the several degrees of ripeness they are of, making, in general, three sorts, which a little experience easily teaches to separate properly, the difference being apparent enough at first sight.

As fast as they are gathered and sorted they are carried under a shed prepared for the purpose, and laid in large heaps to meliorate: this practice I cannot enough recommend, as being of great service to the liquor, improving its quality, and making it keep, without comparison, better; and all this is caused by a little sweating in the heap.

Yet, good as this practice may be, some avaricious planters cannot be induced to adopt it, because, say they, the apples fresh from the tree will yield better; as, of these last, about twenty bushels will give a hoghead of cyder; whereas, of the other apples, which have been heaped, it will take about twenty-five to make the same quantity.

I suffer my apples to lie in the heap a longer or a shorter time, according to the nature of them, such as are harsh and solid requiring to lie longer, by several days, than those that are mellow and pulpy; and the degree of maturity the apples had attained before they were heaped, makes also some difference in this respect.

I have already observed, that I divide my fruit into three several sorts, according to the state of its maturity: I have now to add, that from these three sortings I have no less than six several kinds of cyder, each different from the other in taste, flavour, and quality.

As fast as the fruit is ground (I need not, I think, mention that I use the ripest first) the pulp is put into a large vat near the press: at the bottom of the vat is a tap, through which a considerable quantity of the prime vinous juice will run without any pressing, induced by its own weight only: this produces my best cyder; and I always tun it up

by itself: the pulp is afterwards pressed in the usual way. The same process is used in all the three sortings of apples; by which means I get, as I said before, six sorts of cyder.

The first runnings from the vat I immediately put into the vessels in which it is to remain; only, if it happens, by any accident, to be too foul, I strain it first. I allow here but a small vent-hole, and when it has done working I fill the vessel with some of the same liquor reserved for that purpose: I afterwards, by degrees, close the vent till it is finally and well stopped.

As to the juice, which undergoes the action of the press, I put this, as soon as it is run off, into vessels, where I suffer it to remain about thirty hours, according to the season, till the *fæces* are precipitated, or fallen to the bottom; after which I draw it off, and tun it up in the vessels in which it is to remain, with the precautions, however, above mentioned, when I treated of the first runnings.

The kind of vessels I use, and which I think by far best, are upright hogheads, broader at the upper head than at the bottom; and I often, after my cyder has done fermenting, cast two or three handfuls of wheat bran into each vessel, which serves to thicken the head or cream of the liquor, and makes it keep better.

I am very careful with respect to the vessels into which I put my cyder, always avoiding new ones, if possible, as they give the liquor a twang, or bad taste, and hurt its colour: my usual way is, to season all my new casks, that I possibly can, with small beer, which I use in common in my family, though I live in a cyder country; and if I have not an opportunity of doing this, I scald them with water in which a considerable quantity of apple-pulp has been boiled.

If a vessel is not sweet, it may easily be cured, unless very bad indeed, by putting some unslaked lime into it, adding some cold water, stopping it close, and rolling it about till the noise within is no longer heard.

I have often found it of great use towards enlivening the liquor, to slice about a dozen sweet apples into a hoghead: I am also inclined to think it makes it keep better.

The

The best cyder I ever had was a few years ago, when I put in each hoghead about three quarts of good wheat first boiled and hulled, so as to have, in some measure, the appearance of boiled rice.

When I am obliged to put any cyder into a cask I suspect, and afterwards discover it has given the liquor a bad taste, I cause some mustard seed to be ground in a quern with some cyder: this mixture, being put into the hoghead, is often of great service, and restores it to its original good taste.

Cyder, when it is tunned, is very apt to lose that fine mild spirit which renders it so pleasant and brisk a liquor; therefore great caution is to be used with respect to the vent. The wild, furious, and ungovernable spirit should be suffered to escape; which may easily be effected, by leaving a small vent open for a few days; after which the barrel must be close stopped, for if it gets any vent, the liquor will stand a great chance of being entirely spoiled; on the contrary, if well bunged, though it may dead and flat at first, it will soon recover itself, maturate, and be fit for drinking. This particular part of the management of cyder is critical, and depends greatly on the temperature of the air, so that it is impossible to give any *absolute* directions about it, as something must still be left to be learned by experience, and governed by discretion.

I must give one particular piece of advice to such as intend making cyder, which is, that they diligently watch the alterations in it upon every change of weather, as a small neglect, at such times, is often fatal to many hogheads, and the danger is much greater in summer than in winter. There is scarcely any disease incident to this liquor, but what may easily be cured by a timely application: if it is only a little inclined to tartness, wheat, managed as above mentioned, will cure it; and the same thing is also very good to preserve it, when it is drawn out of one cask into another: the quantity when the liquor is tart is about half a peck to a hoghead; I have sometimes even put a quart more.

This

This simple remedy will, I say, often cure the tartness I mentioned; but sometimes, when it is very thick and sourish, it may be necessary to raise a new fermentation, to purge off the impurities, and make them subside: this may be soon done by bruising the flesh of a few apples to a pulp with some of the liquor, and putting the whole into the bung-hole of the vessel; this will raise a ferment, and cure the cyder: when that is over, it will be proper to draw it off into another cask; and it will also be a very useful precaution, to put into the last-mentioned vessel about a quarter of a peck of wheat, prepared as I have already directed: this will give it new life and spirits, and make it keep better, and drink much pleasanter.

I have sometimes also used another method to cure tart cyder; but it has not always succeeded with me; why, I cannot say, as some people, who live not many miles from me, have great dependence on it. Something may depend on their soil differing from mine, though this may, to some of your readers, seem to have a very remote analogy to the case in hand. The remedy is, to break half a dozen new-laid eggs, and beat them up, shells and all, till they are brought to a frothy oil: this is put into the bung-hole of a hoghead, and, as I am credibly informed, sometimes proves a very efficacious remedy: it has succeeded with me, but not so often as to induce me to depend much upon it; I mention it, however, as it may prove of more efficacy with others than it has with me.

An industrious planter will, by the constancy of his observations and remarks, always have it in his power to cure his own liquor by receipts of his own discovering; and for this purpose I would recommend, that he be continually making experiments, and that whatever trials he makes, be in various modes and proportions; for the remedy that may be of no service in one form, may possibly be very efficacious when altered with judgment, which judgment can only be acquired by experience and observation.

It is to be noticed, that, if the cyder is acid, and at the same time clear, it is in a very dangerous state, being but

rarely recovered: therefore, in general, when this is the case, the cure is scarcely worth attempting.

I have often used wheat for the recovery of my cyder in other forms, sometimes putting about half a peck, unground, into a hoghead for it to feed on; at other times I have made dough of coarse meal with the bran in it, adding some leaven, using no salt, and putting warm cyder, or white wine, instead of water, in the mixture: this dough I make into lumps about as large as my fist, and thrust them into the bung-hole of the hoghead, the quantity being about half a peck of the meal to a hoghead.

Many mix different kinds of spice with their liquor, particularly ginger, which they think of great service; but I never use it now, seldom having found any great effect resulting from it, and being of opinion that it renders the cyder more unwholesome than it can possibly in its own nature be; for, though the ginger may not make any very sensible alteration in the immediate taste of the liquor, it must, I think, strongly impregnate it with its fiery particles, and thereby greatly irritate the mass of blood, and inflame the lungs of such as drink any quantities of liquor wherein it has been infused: others, however, may differ in opinion from me: I know, indeed, many that do so; therefore I only declare *my* opinion.

There is one custom, much practised by cyder-makers, which I cannot help detesting, that is, putting animal flesh in their liquors: some put several pounds of veal into a hoghead; others, pork, beef, and mutton; and sorry I am to have it to say, I have known some put horse-flesh to chuse, thinking it preferable to the flesh of any other animal. What can be the reason for such their opinion, I am quite at a loss to learn, being sensible, that there is a very material difference betwixt spirits extracted from animal substances, and what vegetables yield.

They do this, I believe, by prescription, thinking that what their fathers practised cannot be wrong.

I, for my own particular part, am not so infatuated by prejudice; my reason disapproves of the practice, therefore I reject it.

You

You will, I hope, gentlemen, excuse the manner in which these detached sentiments, on a particular subject, are put together : I am an old man, and therefore do not love much trouble ; otherwise, as on a second reading I did not, myself, approve of my manner, I should have clothed them a-new. I comfort myself, however, with the reflection, that your readers will be more attentive to the matter than the manner : my meaning is good, and that is all the merit I presume to arrogate to myself.

With a perfect approbation of the many valuable pieces contained in your collection, I shall now conclude, that I am, with great truth,

GENTLEMEN,

An admirer, reader, and

Hereford, March 2, 1764.

purchaser of your work,

AN OLD PLANTER.

N U M B E R X I.

A Letter to the Editors, on the best Methods of planting Willow Trunchions, saving Lucern Seed, and planting Magaxan Beans for Horse-Food.

GENTLEMEN,

I Send you something for the *Museum Rusticum* ; first, an infallible and sure method of planting willow-trunchions in any soil.

I have but little ground, and therefore make many experiments, which, if I have leisure, I may communicate for your valuable collection*.

I set twenty willow-sets (the swallow-tail'd willow, or white willow) trunchions, six or eight feet long ; sloping sharp at the bottom, quite round, with the bark off above

G 2

a hand's

* We should be greatly obliged to this gentleman for the communication of his experiments, but could wish they were given more at large than those now sent. E.

a hand's breadth: I set them in round holes, digging out with the spade two feet deep, and then a deep hole with an iron crow, and chopped and rammed the turf in first, and then rammed the loose mould upon that, as you would set a gate-post: they were first soaked three weeks in water.

I set twenty on a sandy bank, on the turf part, in holes a foot square.

I set twenty, in the same manner, on level turf ground; and twenty also in loose land, that was always dug; all in the month of February.

Those on the loose ground all grew; as also those on the bank; (there was no water in the ditch, for it was a perfect red sand, and no clay at bottom) those on level ground all died.

You see, then, the advantage of setting willows on banks, near the sea, or any where; or in loose earth.

I send you, also, the best way of saving the seed of lucern.

Plant out three or four sets, two or three years old, in the wet months, in the richest ground you have, to the south sun: when they run up high, stick a pole in the middle, and small faggot-sticks all round, and tie a band, or whipcord, round them, but not too tight.

Your plants will run up six feet, (I have tried it) and blossom well, and bear good seed.

Dry it well in bags, and rub it out by degrees; 'tis the best of seed.

I clip the seed off, as it ripens, with a pair of scissars †: I sowed it last October, and shall plant it out in summer, if the frost don't kill it: I plant them out at a foot distance, in rows, round my garden, for borders, in the richest ground; and in summer, when in blossom, they are near six feet high.

I sow the magazan bean at Christmas; they are a very sweet bean, less than the hotspur: they are very good for
horses,

† It is easily to be perceived that our correspondent's trials were in small quantities: the principles of his practice are certainly good, but the expence would be too large in considerable concerns. R.

horses, if cut while soft, with chaff-hay, in a box, and shook about in the barn, they will get dry and hard, will be excellent food, and make them perform double their work.

I plant them quite thick, and deep, in a drill, and cover them with litter in frosts; and plant them out in spring, in rows, near two feet distance, and four inches in the rows.

I must send you the true art of planting potatoes*.

Feb. 9, 1764.

Little Brickhill, Bucks.

Your's,

W. P. †

NUMBER XII.

A Letter to the Editors, in Defence of Denshiring, or Burn-baiting Land.

GENTLEMEN,

IF I mistake not, you have frequently expressed a disapprobation of denshiring, or paring and burning land. Give me leave, from some experience of my own, and more of my neighbours, to say a word or two for it †.

I will freely allow, that a great quantity of particles (of what kind I will not determine) are carried off the land in the smoke; but certainly the greatest bulk of the sods remains in the ashes; and in these ashes are contained all or most of the salts, whose weight will not allow them to fly off: these are returned to the land again in a much better state,

* Whenever this gentleman pleases to send us the above, it will meet with a very favourable reception; but we must again request he will be a little more particular in his account. E.

† We hope our correspondent will excuse our omitting his last paragraph, as it would by many have been interpreted into a puff for a work, of which however we testify no disapprobation. Besides, if our correspondent will again take the trouble of reading our Leading Questions, he will probably find his mistake. E.

‡ It is, in many parts of England, the generally-received opinion, that this practice may be of service to stiff heavy lands; but, for the most part, is a great injury to those of a lighter quality. O.

state than while fixed to the fods, where they were of very little, or no use.

I cannot find that the soil is any thinner after pared land is laid down with seeds; and if not thinner, there are so many advantages from this management, as manuring the ground, destroying the seeds of weeds, opening the soil by the heat of the fire, and, above all, insuring good crops to the farmer, and (if properly managed) preparing the ground for seeds, that I will boldly pronounce in favour of it, and have no doubt but it will, in time, be the universal system*.

I said, if properly managed; for if a farmer, after paring and burning his land, shall sow crop after crop, till he finds it will bear no more corn, and then leaves it to take its chance, there can be no doubt but that it will be in a very bad state, almost ruined; but this is not owing to the denshiring, but to his own covetousness.

The system I should advise, and which most of our † intelligent graziers follow, is, when the ashes are spread, to plow it, and sow turneps at Midsummer, on the first tilth: they cannot easily be hoed, nor do they require it, standing generally thin enough, and growing very large ‡.

Suppose, then, turneps eaten off by March or April following: then let the ground be plowed well three or four times, and harrowed after each plowing: at Midsummer
sow

* Denshiring is not a new practice in England, but has been, for some centuries, more or less used; therefore, was it possessed of all the qualities ascribed to it by our correspondent, particularly that of *always* insuring good crops to the farmer, it would certainly, before this time, have been more universally adopted, and have become, perhaps, the universal system. O.

† By this passage, we apprehend, our correspondent means the Lincolnshire graziers: if we are wrong, we should be obliged to him to set us right. O.

‡ As this gentleman observes, that the turneps do not require hoeing in this way, we should have been glad had he informed us what quantity of seed it is most usual to sow on an acre. O.

sow a second crop of turneps *: this will be much better than the first, and must be eaten off with sheep, in the same manner as the first crop. The ground will now be extremely fine; it must be plowed twice or thrice, and sown with barley: after the barley is taken off the ground, plow it once, and sow wheat at Michaelmas.

These are the four first crops, the first year turneps, the second year turneps, the third year barley, fourth year wheat. These crops will be all very good, as the land will be in heart, and the farmer will be very well paid for his trouble and expence.

When the wheat is off, the farmer should fallow his land immediately, and the summer following give it a dressing of manure: at Midsummer (having, as I said, manured it and plowed it well) let him again sow turneps, and the spring following, barley and seeds.

Of all the land I have seen managed in this way, I do not know any that has not succeeded, and been infinitely better than it was before the denshiring.

To instance a farm of two hundred pounds a year, which was let by my father to a very good industrious intelligent farmer, but who was tied up by covenant from plowing any part of it †.

About twelve years ago, on my father's death, this tenant, having had a considerable loss in his cattle, desired to plow some land up, in the method I have mentioned: though
pre-

* As it is very unusual in most countries to sow two successive crops of turneps, we should be obliged to our correspondent, if he would inform us what is the nature of the soil where this practice is adopted; perhaps it may be fen land. O.

† This passage, of the farmer's being tied up from plowing any part of his farm, induces us to think that the soil, on which our correspondent so strongly recommends denshiring, is fen land, which is a moory rich black earth in general. It will not be amiss, on this occasion, to refer our readers to a very sensible piece from a practical fen farmer, inserted in our First Volume. It is marked Number XCVII. page 418. and treats of the culture of coleseed in the fen countries: here our readers may find described the method in which land is there pared and burned. O.

prejudiced as much as my father was against denshiring, yet, willing to see the experiment, I consented, and approving his first trials, allowed him yearly to pare and burn some acres ever since.

He now assures me, that he can, and does keep one third more sheep than he could before, and, I dare say, is some hundreds richer for it. The consequence I would draw is, that if the farm will keep one third more flock, the land is certainly not the worse for it.

I have not now time to shew the difference betwixt this management and that of plowing and sowing the land without denshiring, which, with some more observations, I must defer to another opportunity *.

I should say a few words on Mr. Comber's logical defence of his slovenly neighbours, (no one ever recommended the farmers of the East riding of Yorkshire for a pattern) but do not think it fair, as he has set his name to his letter, whilst I shall remain,

GENTLEMEN,

Your very humble servant,

RUSTICUS.

N U M B E R XIII.

A Letter to the Editors, to which are annexed Hints for Enquiries, respecting several Articles which might be usefully cultivated, propagated, and manufactured in the Southern Provinces of America.

GENTLEMEN,

HAVING received great pleasure from the perusal of the Numbers that are already published of your *Museum Rusticum*, &c. and being persuaded, that your principal

* The sooner we hear again from this gentleman, the more agreeable it will be to us; and we could wish he had permitted us to make use of his name, as it would have done us so much honour. When gentlemen of such fortune and consequence undertake the improvement of agriculture, it cannot certainly be long before it must be in a flourishing state. O.

principal aim in your undertaking is to promote the public welfare, it would be particularly pleasing to me, to be able to furnish any information worthy your attention; but I am, from my situation and way of life, rendered incapable of contributing any thing towards your undertaking, further than hints for your future enquiries, respecting various articles, which seem particularly adapted to the soil and climate of the southern colonies of North-America.

How far the promoting the raising the subjoined productions in America might tend to the mutual advantage of this kingdom and the colonies, is beyond my capacity to determine: that such an event would be productive of great and reciprocal benefits, I apprehend, few will be hardy enough to deny.

I am the more desirous to be rightly informed of the most approved methods of managing the several articles I have taken the liberty to recommend to your future consideration, as being determined to settle in some of the southern colonies the next autumn, and should be glad to have it in my power to contribute towards the public welfare *, at the same time that I pursued my own particular interest.

I sincerely wish your labours may be productive of every public benefit they seem calculated to promote, and am,

GENTLEMEN,

Your most humble servant,

A SUBSCRIBER.

ARTICLES *for* ENQUIRY †.

Hemp and Flax.—What soils are most proper for those growths? what are the best methods of cultivating them,

VOL. II. N^o. 7.

H

and

* This gentleman would greatly oblige us by continuing his correspondence after his arrival in America. A.

† We should be much indebted to such of our correspondents as would undertake to give this gentleman full answers to his several very important questions; and we are the rather induced to make this request, as we *know* many, who favour us with their communications, are very capable of doing it. A.

and the best methods to prepare them so as to fit them for a British market?

Cotton.—How many different kinds of this plant are cultivated, and in what countries is each kind principally cultivated?

Is the cotton-plant of the *East* the same as that cultivated in the *West Indies*?

Why is the cotton of Jamaica of a better quality than that of any other of the West-India islands?

Oil Olive, Figs, Raisins and Currants.—The present most approved methods of ordering these several productions.

Pot-ash.—The various kinds of ash now usually in demand in these kingdoms, the subjects of which the different kinds are made, and the process for making each kind.

Tea.—How many species of this plant are there cultivated for this purpose? the culture and method of curing the leaf, &c.

Query.—Would it be allowed to be imported, should it be found capable of being cultivated in America?—and is it not probable that on enquiry the plant may prove to be indigenous in America, as the famous ginseng and the silk-worm are known to be?

Silk.—Are there any more than one species of this worm?

What is the practice of the Chinese in raising the silk-worm?

How many different species of the mulberry are there cultivated for this purpose, and in what countries is each different kind principally cultivated?

Is the mulberry of China the same as that of Europe?

What are the best methods of feeding silkworms in houses?

By what means are the eggs procured and preserved?

Are there any methods by which the eggs may be retarded, or hastened in their hatching, and what are those methods?

How many silk balls are usually wound together, to constitute the single thread of the skain? and what is the circumference of the reel, and quantity of each skain?

Query.

Query.—Would it not be worth while to enquire whether a particular kind of silk might not be obtained from the worms which feed on the *parsimon* tree in Carolina, and which make pods similar to the common silkworm, except being larger, and the silk of a brown colour?

Wine.—The practice of the several wine countries in the cultivation of the vine and management of their wines.

The several species of vines from whence various kinds of wines are made.

Query.—Is it not very probable, an excellent wine, similar to that of Madeira, might be produced in Bermudas, as the nature of the soil and under stratum seem to indicate?

NUMBER XIV.

A Letter to the Editors, on the Benefit of Watering Land in Dry Seasons.

GENTLEMEN,

I WROTE to you some time ago concerning the benefit of watering land in dry summers, which was inserted in your *Museum Rusticum*, and is marked No. LVII. in Volume the First, in which you desired I would inform you of some remarks made on that letter.

First, You desire to know why I sowed so many sorts of grass seed.

My reason was, out of so many, some must succeed, and others fail, as the soil suited each particular part more than the rest: for instance, the rib, or plantane grass, never came up, though a small patch of it, sowed at the same time in my garden, to see its nature, grew and throve: on another part of the field, near the pond before mentioned, the rey-grass alone exceeded the rest of the grasses; from which, I imagine, it thrives best in moist places.

Secondly, I am desired to inform you what time of the year the watering was performed.

It

It was in July, the crop being sown in April: as to the number of turns the cart took, I never kept an account; but do remember, as it went up the field, it did more than water to the end; therefore the upper part received a double watering, as the cart always continued running above a quarter of the way back again, which was not reckoned as any thing, the cart still keeping its line, and going over the upper part again, though before watered, that is, from the lower hedge to the upper hedge. It took up five days; about an acre a day: we always contrived to drive the cart so as the off-wheel should go in the same tract that the near wheel went in before.

Thirdly, I am to answer this question, What were the crops which preceded the sowing the grass?

The crop was red clover, sowed among wheat: before wheat it was sowed with vetches, or thetches.

I believe I have now fully answered all the remarks made on my letter.

I must now, in my turn, ask a few questions of some of your correspondents; if they will inform me how I must treat a field that produces moss, though it lies on a hill, the soil clay: it has been dunged about three years ago with hog-dung; two years before that, very well footed; two years before, only laid down with grass from wheat, being accounted the best wheat land in my farm. I desire to know if lime is proper to eat off the moss, or if it would be better to harrow it up, which, I am told, kills the moss, and does not hurt the grass.

I shall be obliged to some of your intelligent readers for information. I am,

GENTLEMEN,

North of Hertfordshire,

Your most humble servant,

Feb. 21, 1764.

R. H——DE.

M. B. P. S. A distiller in this neighbourhood manures his land with a water-cart pierced with holes, and filled with his hogs urine, which he preserves in a pit for that purpose.

	Strawberries.	Raspberries.	Cherries.	Apricots.	Plums.	Peaches.	Nectarines.	Figs.	Vines.	Apples.	Pears.	Sundry other Fruits.
June.	Scarlet Red-Wood White-Wood Green Hautboy Alpine, which produces fruit every month till November Goree	Red White	Early May May Duke Black Heart Bleeding Ditto Gascoigne Ditto Luke Warden Caroon Orleans Great Heartlib Carnation									Gooseberries. Crystal White Dutch Amber Red St. Laurence Carters
July.				Orange Masculine Turkie English Breda Roman Temple Brussel	Orleans Reine Claude Roche Corbon Green Gage Verdock Imperatrice Imperial Blue Perdrigon Fotheringham Promordian Queen Mother Le Royal Dras D'Or St. Catharine	Red Nutmeg, not very good, but early						Currants. Red Dutch White Ditto
August.			Holman Duke Morella			White Magdalen Minion Old Newington Alberge Incomparable Montaubon Double Mantagne Dutch Peach Nobles Double Swallow Bourden Red Magdalen Teton de Venus Chancelour Belchevereuse Admirable Burdock Ann Peach Catharine	Roman Red Roman Newington Tawney Elruge Italian Brinion Round Varmarsh Late Newington Des Pots					Melons.
September.								Early White Blue Marcilles Malta Black Brown Ischia Black Ditto	White Sweetwa- Cluster Parsley [dine White Musca- Black Currant Royal Muscadine Blue Ditto Black Orleans Black Burgundy Frontinac		Orange Bergamot Jargonel	Mulberries. Black White
October.												Filberts
November.												Quinces. Portugal Pear Apple Walnuts
December.										Golden Pippins Margyl Transparent Pome d'api Non Pareil Golden Russeting	La Burec Verte Longue La Marquise Messire Jean Martinfec St. Michel Cressan Chaumontelle Windfor Virgoleuse Chaffery Ambret Espine [Espagne Bon Chrétien d' St. Germain Colmar [Hyver Bon Chrétien de	Services. Medlars. Oranges China Sevilles Lemons

NUMBER XVI.

A LIST of the several Kinds of FRUIT TREES, planted in his Grace the Duke of ———'s New Kitchen-Garden, at ——— in Nottinghamshire, in the Autumn of the Year 1760, adapted to their several Aspects, &c. &c. The Numbers on this List refer to those on the Plan sent to his Grace.

No. 1.

Against the Upper South Wall, of 330 Feet, 23 Trees, at 14 Feet 6 Inches Distance.

Sixteen Peaches.

- 1 White Nutmeg
- 1 Red Nutmeg
- 1 Early Ann
- 2 True Minion
- 2 Red Magdalen
- 2 Nobleffe
- 1 Early Newington
- 2 Royal George
- 2 True Vanguard
- 1 Old Newington
- 1 Incomparable.

Seven Nectarines.

- 3 Red Roman
- 3 Newington
- 1 Fairchilds Early.

No. 2.

Against the Lower South Wall, of 546 Feet, 39 Trees, at 14 Feet Distance.

Twenty-eight Peaches.

- 2 Catherine P.
- 2 Late Admirable
- 2 Bourdine
- 2 Yellow Alberge
- 2 Musk Violet

VOL. II. No. 7.

- 4 Nobleffe
- 2 Purple or Pourpree
- 2 Rosanna
- 2 Old Newington
- 2 Montauban
- 2 Millets Minion
- 2 True Minion
- 2 Royal George.

Eleven Nectarines.

- 3 Red Roman
- 3 Newington
- 2 Scarlet-come-clean
- 2 Red Italian
- 1 Elruge.

No. 3.

Against the Lower East Wall, 194 Feet, 13 Trees, at 14 Feet 10 Inches Distance.

Five Apricots.

- 1 Turkey
- 1 Roman
- 1 Brussels
- 1 Royal Orange
- 1 Breda.

Four Cherries.

- 4 May Duke.

Four Plums.

- 2 Green Gage
- 2 Blue Perdrigons.

I

No.

No. 4.

Against the Lower West
Wall, 195 Feet, 13 Trees,
at 14 Feet 11 Inches Di-
stance.

Two Cherries.

2 Black Hearts.

Four Plums.

1 Semiano

1 Drap D'Ore

1 Violet

1 Damask Ver de Coeur.

Two Apricots.

1 Masculine

1 Bruffels.

Two Peaches.

1 Early Newington

1 Musk Violet.

Two Cherries.

2 White Hearts.

No. 5.

Against the Upper East Wall,
185 Feet, 13 Trees, at
14 Feet 1 Inch Distance.

Four Cherries.

2 Harrisons Hearts.

2 May Dukes.

Five Plums.

2 Green Gages

1 Imperatrice

2 La Royale.

Four Cherries.

2 Bleeding Hearts

2 Carnations.

No. 6.

Against the Upper West
Wall, 185 Feet, 13 Trees,
at 14 Feet 2 Inches Di-
stance.

Nine Peaches.

2 Nobleffe

2 Red Magdalens

2 Double Montagnes

2 Belhouse

1 Belchevereufes.

Four Nectarines.

2 Elruges

1 Murray

1 Pifa.

No. 7.

Against the Lower North
Wall, 514 Feet, 29 Trees.

The Plums and Cherries at
14 Feet 4 Inches Distance,

Nine Plums.

3 Bonum Magnum

3 Royal Dolphins

3 Imperials.

Nine Cherries.

6 Morellas

3 Dukes.

The Pears at 23 Feet 2
Inches Distance.

Eleven Pears.

2 Cardillac

2 Dr. Uvidall's Germain

2 Perkinson Wardens

1 Jargonell

2 St. Germaines

2 Cressans.

No. 8.

Against the Upper North
Wall, 485 Feet, 34 Trees,
at 14 Feet 6 Inches Di-
stance.

Twenty Cherries.

10 Morellas

10 May Dukes.

Fourteen Plums.

2 Royal Dolphins

2 Morocco

2 White Pears

3 Green Gages

2 Dupan Valure

3 Bonum Magnum.

No.

No. 9.

Against the East Wall, Outside of the Lower Garden, 194 Feet, at 20 Feet 8 Inches Distance.

Nine Pears.

- 2 Buree Du Roi
- 2 Colmars
- 2 St. Germain
- 2 Cressans
- 1 Bel De Chaumontelle.

No. 10.

Against the East Side of the South Wall, 54 Feet, 3 Trees, at 15 Feet 8 Inches Distance.

Three Figs.

- 3 Early White Marseilles.

No. 11.

Against the West Side of the South Wall, 4 Trees, at 15 Feet 3 Inches Distance.

Four Figs.

- 2 Red
- 2 Large Blue

No. 12.

Against the West Side without the Wall, 3 Trees.

Three Pears.

- 1 Buree Rouge
- 1 Virgoluce
- 1 Colmar.

No. 13.

Against the East Side, 3 Trees.

Three Pears.

- 2 Cressans
- 1 St. Germain.

No. 14.

Seven Pear Trees

- 1 Bel De Chaumontelle

- 1 Virgoluce
- 1 Royal D'Hyver
- 1 Petit Oyin
- 1 Cressan
- 1 St. Germain
- 1 Swans Egg.

No. 15.

The East Espalier, in the Upper Garden, 9 Trees, at 18 Feet Distance.

Nine Apricots.

- 3 Bruffels
- 3 Royal Orange
- 3 Breda.

No. 16.

The South Espalier, next the Stove, 14 Trees.

Fourteen Figs.

- 2 Brunswick
- 3 Early Blue
- 3 Early White
- 3 Royal Grey
- 3 Red.

No. 17.

The West Espalier in the Upper Garden, 9 Trees.

Nine Cherries.

- 5 May Dukes
- 2 Black Hearts
- 2 White Hearts.

No. 18.

The East Espalier in the Lower Garden, 9 Trees.

Nine Plums.

- 3 Green Gage
- 2 Orleans
- 2 Matchless
- 2 Violet,

I 2

No.

No. 19.

The South Espalier in the
Lower Garden, 17 Trees.

Seventeen Pears.

- 1 Early Muscat
- 1 Musk Roberts
- 1 Musk Blanquet
- 1 Callow Roseat
- 1 Hamdens Bergamot
- 2 English Bergamot
- 2 Jargonell
- 2 Swans Egg
- 1 August Muscat
- 2 Cressans
- 3 Cardilliac.

No. 20.

The West Espalier in the
Lower Garden, 9 Trees.

Nine Plums.

- 2 Green Gage
- 2 Queen Mother
- 2 Damask Ver de Coeur
- 2 Black Damask
- 1 Morocco,

Sorts of Vines for the Hot-
Wall.

Seventy-seven Vines.

July

Black Sweet-Water
White Sweet-Water
Royal Muscadine or White-
Chassalas
Old Muscadine
Blue Muscadine
Black Cluster
Blue Hamburg
Red Hamburg
St. Peter
White Madeira
Burlake
Red Raisin
White Raisin
White Frontinac
Black Frontinac
Blue Frontinac
Grifley Frontinac
Black Muscat
White Muscat.

*Standard Trees planted on the
different Aspects.*

Upper South Wall	21
Lower South Wall	37
Lower East Wall	9
Lower West Wall	9
Upper East Wall	9
Upper West Wall	9
Lower North Wall	16
On Ditto	7
Upper North Wall	32

NUMBER XVII.

A Letter from Mr. ———, Gardener to his Grace the Duke of ———, to Mr. ———, Nursery Man near Kensington, relative to the Fruit Trees contained in the last Article.

SIR,

I RECEIVED yours of the 20th instant, mentioning my not giving you an account of the success of the fruit trees you furnished his grace with.

The great encomiums every one gave the fruit, that tasted it this year, particularly his grace and his company, who happened to be here at the time of its greatest perfection, I made no doubt had reached your ears, which was the only reason I did not trouble you with any account about them; but if it has happened that his grace has not seen you, you may expect from him a very satisfactory account of them.

The trees in general have succeeded so well, that I believe they are inferior to none of their age; and, though the walls are twelve feet high, they are in great part well furnished with wood to the top. I had plenty of peaches and nectarines this year, chiefly on those on standard stocks, of the Montaubon, Nobleffe, Red Magdalen, and Millets Minion, peaches; and the nectarines in general; some on other sorts, and on some sorts none at all; and, although it has been a very unkind year in general for fruit, yet I can assure you, I think I never tasted better. I have a warm dry soil, and should I have a kind spring and warm summer next year, as this was the reverse, I don't doubt of having as good fruit as any in the kingdom, except none. This you may think extraordinary, to expect success in a dry soil, equally in a wet or dry season; but a man of business will allow, that industry and experience, with the assistance of a hearty good will, can do a great deal. The peculiar situation of his grace's garden is such, that with a great deal of trouble I have made such conveniencies as I have not elsewhere seen, and cannot fail (barring uncommon blights in the spring) of producing such success as will agreeably surprize all judges who see them for a long time to come. I am,

SIR,

Dec. 24, 1763.

Your humble servant.

NUMBER XVIII.

A Letter to the Editors, from a Member of the Society, on the superior Excellence of Timothy Grass, and the great Advantage that will accrue to the Farmer, by cultivating it on low damp or wet Meadows, and boggy or fenny Land, &c.

GENTLEMEN,

A SPIRIT for improving our artificial pastures seems to be raised in most counties of England, which I in a great measure attribute to the circulation of your valuable work.

The burnet grass, cultivated with such success by Mr. Rocque of Walham-green, is in universal request, insomuch that he will, I am apt to think, find it difficult to supply, this year, the very large demands he has for the seed.

Not the least doubt can be made of the excellence of this pasture, as it has been proved, on repeated trials, that it is far beyond any thing of the kind yet brought into use.

A member of our society, in a piece marked Number LII. page 233, of your first Volume, informs the public of some particulars respecting the Timothy grass. In some places he is right, but in many others has been deceived or misinformed. He says, *The Timothy grass is not perhaps the sweetest, or the best that can be cultivated.* By this he should seem to insinuate, that it is but indifferent in its quality; whereas the contrary is the fact; for, if we may judge by the preference cattle give it, it exceeds in sweetness most others that grow.

Some time since, an experiment was made in this matter. A square piece of land was plowed, and reduced to a very fine tilth: it was then divided into four equal quarters or parts: on the first was sown a proper quantity of *lucerne seed*; on another quarter, *saintfoin*; on a third part, *clover*; and on the fourth, or remaining quarter, was sown the seed of the
Timothy

Timothy grass. These several plants were suffered to grow till they were in a condition to be depastured by cattle.

When they were all arrived at a proper growth, horses, black cattle, cows and sheep, were promiscuously turned into the field, with an intent to observe which of the grasses the several sorts of cattle would soonest take to, it not being at all imagined, that they would all prefer one kind. However, this was the case, for the Timothy grass was eaten by them quite bare before the other sorts were touched, though they were at liberty to range over the whole field. This was a convincing proof, that the Timothy grass was preferred by them all to the other three sorts of grass above mentioned; and after such an experiment, few will, I believe, dispute its excellence, or think it not worth cultivating.

I find also that Mr. Rocque, in an answer to a letter sent him by Mr. Corbett, of Salop, mentions the Timothy grass, (Vol. I. page 309.) but it is only modestly to observe, that he cannot from experience say any thing relative to it.

I know that very many of your readers are desirous of being informed of the nature of this grass, which information I am very happy in being able to give them through your means.

This plant was first taken notice of in North America, and seems to be a native of Virginia, where it grows, without cultivation, to a great height, on moorish swampy grounds.

Some years ago the seeds of this plant were carried from Virginia, by one Mr. *Timothy Hanson*, to North Carolina, where it is now cultivated by the inhabitants; and from this circumstance it received the name it now bears.

It thrives most, as I said before, in low, damp, marshy grounds; for in such soil and situation it will produce a fine turf in three weeks from the time of sowing the seed. It is very luxuriant, grows to a considerable height, and has in some sort the appearance of wheat or rye, having a broad blade or leaf.

After the experiment above receited, it is certainly unnecessary to observe, how fond all sorts of cattle are of this herb whilst in a green growing state; but it will not be improper to add, that they are nearly, if not quite, as fond of it, when dried and made into hay: but when it is intended for this use, it should always be mown when it is in full sap, just before it flowers, for if it is left longer before it is cut, being so luxuriant and quick a grower, it becomes harsh, and is much dryer and more chirky food, than when it is cut in its prime.

I have more than once seen the Timothy grass, which Mr. Rocque, in his letter above referred to, mentions to have sown in September last: it is now surprizingly forward, having vegetated during the course of almost the whole winter. There is one particular spot of this land, which has been for a long time covered with water; yet is the plant almost as luxuriant there as in any other part*.

I would by all means recommend this plant to the notice of the gentlemen who are improving their estates in Ireland, as I know of no grass that is so well adapted to be sown in their bogs, and will at the same time yield so considerable a profit, by being an excellent fodder, either green or dry.

It is not at all to be doubted, but that with a little observation, and a few experiments made with judgment, certain grasses might be found adapted to every circumstance of soil and situation.

A great

* We have the pleasure to inform the public, that Mr. Rocque's experiments, on the culture of the Timothy grass, have been attended with all imaginable success; and it is likely to be a valuable acquisition to the British husbandry, as it seems to thrive well on lands of very different qualities, *viz.* dry uplands and wet marshy grounds: it cannot fail therefore being of immense utility to some estates in the low fenny countries. The fact, mentioned by our correspondent, of this plant's thriving, though for a long time covered with water, is, to our knowledge, literally true, having very lately seen Mr. Rocque's ground, in the wet parts of which the Timothy grass is in good proof. N.

A great deal depends on the judgment of the farmer, exercised in the arrangement of his crops; and the nature of the soil is always principally to be consulted, for such artificial grasses, as would do very well on a light sandy soil, would ruin the farmer if sown on a clay.

I have not now leisure to enlarge on this part of husbandry, but shall not fail taking another opportunity of doing it. I am,

GENTLEMEN,

Your humble servant,

A MEMBER of the SOCIETY

Hamstead, March 16, 1764.

of ARTS.

N U M B E R X I X.

A Letter to the Editors, on the Means of supplying the Poor with Bread-Corn and Fuel at a cheap Rate.

GENTLEMEN,

THE provident ant lays up a stock in summer, to supply the demands of nature in the winter; and those who live on the sides of mountains, where torrents rush down in winter, but where there is a perfect dearth of water in summer, dig pits in the channels of the little brooks, which serve as repositories of water for the service of themselves and their cattle during the summer solstice.

Politicians (who, if they have any knowledge at all, must derive it from the view of nature, and a mature contemplation of the works of the Great Author and Director of the universe) have in most civilized countries instituted granaries for the supply of corn in the time of dearth; and I was once very fond of a scheme for doing something of the same kind in this island; and I had designed my grand repository at *Carrisbrook-Castle*, in the *Isle of Wight*, the place of confinement of the unfortunate king Charles the First.

My pitching upon that place more particularly was, because of the easy conveyance of the grain *to* and *from* it; and that, being an island, it was less subject to popular insurrections on every slight disgust; a distemper this kingdom is too apt to feel the ill effects of.

Whilst I was meditating on these things, which was many years ago, the late *Signior Guastaldi*, minister from the republic of *Genoa*, came to make me a visit; and upon my asking him, whether, in his country, public granaries had not been found of service, he said, at *Genoa* there was no doing without them; and that the state had always seven years provision before-hand. But, says he, *In your isle it is quite different; for you annually grow more than you eat; and, if I am not misinformed, it is hardly one year in twenty; that the produce of the earth is not fully sufficient for the inhabitants of it: therefore your business should rather be, to take care how to get a market for your superfluity abroad. Yet, I have been told, so negligent is the police here, that, at certain times, the public have given a bounty to transport the corn from the mouths of your own people, who at that very time stood in great need of it.*

I am sorry to say the remark of this learned foreigner had too much foundation in truth; yet, I think, the injury he complains of may be easily redressed, by disallowing the bounty when the price of corn exceeds the mean rate; and, when beyond such a certain rate, by a total prohibition of exportation.

Satisfied I am, that the common methods of stacking corn in the midland parts of England, which preserves it a good many years, will fully answer the ends of granaries; and if all grain was to be sold by weight, instead of measure of capacity, it would at once bring that commodity through the realm to be sold by one rule and standard; the want of which has been complained of in almost every reign since the conquest, and yet hitherto without effectual redress.

Thus may the public be assured of plenty and justice: but still, unless the magistrate will do his duty, in setting
the

the affize, and punishing the fraudulent baker, the face of the poor will be ground; but if the *measure be settled*, the *bounty regulated*, and the *magistrate active*, there can be no room left for apprehensions of any future dearth; or high price of corn.

If what is chalked out above gives foundation to something useful to my fellow-creatures, I have my end, and shall say no more; except, as arithmeticians are wont to illustrate their precepts by an example, I beg the readers patience for the following short narration, because it takes in the article of fuel as well as corn.

At the city of *Bern*, in *Switzerland*, a man of business, by success in his way of trade, had acquired a considerable real and personal estate: being grown in years, and having no family, he made a will to the following effect, *viz.*

“ Being anxious for my fellow citizens of *Bern*, (who
 “ have often suffered by dearth of corn and wine) my
 “ will is, that, by the permission of providence, they
 “ shall never for the future suffer again under the like calamity; to which end and purpose I give my estate,
 “ real and personal, to the senate of *Bern*, in trust for the
 “ people; that is to say, that they receive the produce of
 “ my estate, till it shall come to the sum of (*suppose two*
 “ *thousand pounds*); that then they shall lay out this two
 “ thousand pounds in building a town-house, according
 “ to a plan by me left; the lower story whereof to consist of large vaults, or repositories for wine: the story
 “ above I direct to be formed into a piazza, for such persons as shall come to the market at *Bern*, for disposing of
 “ their goods, free from the injuries of the weather:
 “ above that I direct a council-chamber to be erected, for
 “ a committee of the senate to meet in, from time to
 “ time, to adjust my accounts, and to direct such things
 “ as may be necessary for the charity; and above the council-chamber, as many floors for granaries as can be conveniently raised, to deposit a quantity of corn for the
 “ use of the people, whenever they shall have occasion
 “ for it.

“ And when this building shall be erected, and the ex-
 “ pence of it discharged, I direct the senate of Bern to
 “ receive the produce of my estate, till the same shall
 “ amount to the sum (*suppose of two thousand pounds*);
 “ and when the price of corn shall be under the mean
 “ rate of the last ten years, one fourth part, they shall then
 “ lay out one thousand pounds in corn, and stow it in my
 “ granaries; and the same in wine, when under one fourth
 “ of the mean rate of the last ten years: and my will is,
 “ that none of the said corn or wine shall be sold, untill
 “ the price of corn or wine shall exceed, at the common
 “ market, one fourth of the mean rate for the last ten
 “ years; and then every citizen of Bern shall demand
 “ daily (or proportionably weekly) as many pounds weight
 “ of wheat, and as many pints of wine, as he has mouths
 “ in his family to consume, and no more; that for the
 “ same he pay ready money, after the mean rate that it
 “ has been at for the last ten years past, a due proportion
 “ being allowed for waste, and that to be settled by the
 “ senate; and that each householder shall be so supplied, as
 “ long as the price of corn or wine shall continue above
 “ the rate of one fourth more than the mean rate: and
 “ whatsoever encrease shall be made of the capital, it shall
 “ be laid out, under the same restrictions, in adding to the
 “ stock of corn and wine; which, under the blessing of
 “ God, will, I hope, in certain time, reduce these two
 “ necessary articles of life to very near a fixed price, to
 “ the glory of God, and the benefit of the poor.”

This legacy has subsisted near two hundred years, and has had the desired effect at Bern.

The reverend Mr. *Edward Buckland**, chaplain to the factory at *Aleppo*, returning from thence by Bern, took this hint,

* In the last will and testament of Edward Buckland, clerk, being dated 30th of January, 1618, is contained the following devise alluded to above. “ Item, I give to the bailiffs and
 “ freemen of Kingston upon Thames, in the county of Surry,
 “ and their successors for ever, all that my wharf and parcel of
 “ ground

hint, and settled a sum of money, for the use of the poor at *Kingston on Thames*, for the purchase of coals, nearly in the same manner. The right honourable Arthur Onflow, late speaker of the honourable house of commons, and Nicholas Harding, Esq; are two of the trustees, under whose auspices the poor are abundantly supplied, and the fund greatly augmented.

Near forty years ago William Nicoll, Esq; left also the sum of two hundred pounds for nearly the same purposes, the annual produce of it being devised to be laid out in coals, to be sold to the poor of the same town of Kingston, at a cheap rate, in the winter season*.

It

“ ground enclosed, lying and being on the north side of the
 “ great bridge of Kingston aforesaid, upon condition that they
 “ shall build and set up one convenient storehouse of brick, in
 “ and upon the said wharf, within three years next after my
 “ decease; and after the same house is so erected, shall yearly,
 “ at the best hand, buy and provide so many sea-coals, as
 “ the yearly profit of the said wharf will reach unto, and lay
 “ them up in the said storehouse; and in winter, when most need
 “ shall be, shall sell and deliver them forth to honest poor peo-
 “ ple of the same town at reasonable prices. And if the said
 “ bailiffs and freemen shall not, or will not perform this my
 “ last will, concerning the erecting a storehouse, and providing
 “ of coals for honest poor people as aforesaid, then my will is,
 “ that my said bequest shall be void, and of none effect to them;
 “ and that my brother Samuel Bonnevall, or his heirs, shall,
 “ after my decease, receive and take the profits of the same
 “ wharf, and therewith erect and set up a storehouse upon the
 “ said wharf, in some convenient time, at his discretion, and
 “ take order for the performance of my will in that behalf:
 “ and I require the same at his hands, as he looketh to have
 “ comfort from God in this world, and in the world to
 “ come.”

* In the last will and testament of William Nicoll, Esq; bearing date 10th of November, 1726, is contained the following devise. “ Item, I will, direct, order and appoint, that my
 “ executors herein after named shall, as soon as conveniently
 “ may be after my decease, lay out the sum of two hundred
 “ pounds of lawful money of Great Britain, in the purchase
 “ of freehold lands, and settle and convey the same in such
 “ manner as council shall advise, and so as may best answer the
 “ intention of this my will, unto the recorder of the town of
 “ Kingston

It is a great pity these examples are not followed in many other towns in the inland parts of England, particularly in such places as labour under a great scarcity of wood for fuel, and where the price of coals in winter is nearly, if not quite, double what they are sold for in the summer season.

Such bequests tend greatly to the ease and comfort of the inferior artizans, who have often numerous families, and in the cold winter's weather, when they most want it, can earn less than they can in summer.

Such bequests would ease the parishes of many poor; for a timely supply, at a cheap rate, of such a necessary article of consumption as fuel, would be a means of preventing a number of families from throwing themselves on the parish for relief, which numbers annually do, owing almost entirely to their not having it in their power to supply themselves out of their small earnings with food and fuel, when the latter is sold at the exorbitant rates it is generally retailed at in the winter season to the poor.

That

“ Kingston upon Thames aforefaid for the time being, and to
 “ the high steward of the said town for the time being, and to
 “ the bailiffs of the said town for the time being, and also to
 “ the vicar of the same place for the time being, and their
 “ successors for ever, in trust, and to the intent and purpose
 “ that the interest or produce of the said sum of two hundred
 “ pounds, to commence from the time of my death, until the
 “ same can be so laid out in the purchase of lands as aforefaid;
 “ and the rents, issues, and profits of the said lands, when so
 “ purchased, shall for ever be annually laid out in the buying
 “ of sea-coals, which I will shall be sold from time to time,
 “ in the winter season, for ever, to such poor persons, inhabit-
 “ ing the said town of Kingston upon Thames, (not receiving
 “ any pension or collection from the officers of the said parish)
 “ as they, the said recorder, high-steward, bailiffs, and vicar
 “ for the time being, shall think fit, at the same price such
 “ coals shall cost, after an allowance of the charges of car-
 “ riage and warehouse room, or any other necessary expence;
 “ it being my design and intention, that the said sum, so annu-
 “ ally to be laid out in coals as aforefaid, shall receive a
 “ yearly encrease of so much as the nett produce of the said
 “ lands, so to be purchased, shall amount to, in augmentation
 “ of the said charity”.

That the poor might, in this manner, be relieved without any great expence, or trouble, is certain: of this we have had many instances; and particularly about eleven years ago the hint was given, and some gentlemen about Northampton collected a sum of money, for purchasing coals in the spring at prime cost, and selling to the poor at the same rate in the winter; which answered perfectly well, but has since been overturned to favour some *townsmen*, who soon after sold coals at 2 s. 8 d. *per* hundred weight, which the poor were supplied with at 1 s. 4 d. by the method the gentlemen had entered into.

I am, GENTLEMEN,

Your humble servant, &c.

P. S. As many of my readers may be at a loss what is meant by the expression above, of the *mean rate for the last ten years*, it is necessary to inform them, that the late Doctor Fleetwood, bishop of Ely, has, in his *Chronicon Pretiosum*, given us a table of the rate of wheat and malt for sixty years at Windsor; which said table has been since continued for forty years, which makes a complete century*.

He took the same from the accounts of *Eton College*; the rents of which are determined by the price of those two sorts of grain at Windsor market, on Lady-day and Michaelmas-day. Now the highest price a bushel is sold for, and the lowest price a bushel is sold for, on Lady-day, are added together, and the half thereof taken; and the same done on Michaelmas-day: these two sums are added together, and the half taken for the common rate of the whole year, and respectively set against it in the table.

To know the mean rate of any ten years, is to add the rates of the several ten years together, and divide the sum by ten: the quotient gives the mean rate for these years.

* An engraved plate of this table is given with this month's publication. See the next article.

NUMBER XX.

A Letter to the Editors, explaining the two annexed engraved Tables of the Price of Wheat for a Century.

GENTLEMEN,

THE learned Dr. Fleetwood, bishop of Ely, in his excellent treatise called *Chronicon Pretiosum*, gave the public an account of the price of wheat each year, at Windsor market, for the sixty years preceding the publication of his work, which was taken from the accounts of Eton college.

The right honourable Arthur Onflow, late speaker of the honourable house of commons, desired that account might be continued on, so as to complete a century: it is done from the same authority, and in the same manner, as you may see in the table annexed; and an abstract of the same, drawn into denaries, is in the other print which follows it.

It is in itself only matter of fact; but from it may be deduced many useful observations, as,

First, That the price of wheat has continually decreased, contrary to the opinion commonly entertained.

Secondly, What is the highest, and what is the lowest price wheat has ever been at.

Thirdly, By consulting the history of those years you may generally see the cause why the price has so advanced or sunk.

Fourthly, You see at one view the mean rate for the whole century, and the mean rate for every ten years that century is divided into.

If you think these papers merit the view of the public, you are at liberty to make use of them. I am,

GENTLEMEN,

Your humble servant,

Y. Z.

NUM.

An Account of the true Market-price of Wheat, and
Malt, at Windsor, for 100 Years.

Began & published by W.^m Fleetwood B.^e of Ely from
1646. to 1706.

And since continued in the same Manner.

Years.	Wheat per Quarter.			Malt per Quarter.		
	£.	s.	d.	£.	s.	d.
1646.....	2.	8.	0.	1.	9.	0.
1647.....	3.	13.	8.	1.	17.	0.
1648.....	4.	5.	0.	2.	0.	0.
1649.....	4.	0.	0.	2.	2.	0.
1650.....	3.	16.	8.	1.	18.	6.
1651.....	3.	13.	4.	1.	9.	0.
1652.....	2.	9.	6.	1.	8.	0.
1653.....	1.	15.	6.	1.	8.	0.
1654.....	1.	6.	0.	1.	0.	8.
1655.....	1.	13.	4.	1.	0.	0.
1656.....	2.	3.	0.	1.	4.	0.
1657.....	2.	6.	8.	1.	8.	4.
1658.....	3.	5.	0.	1.	9.	4.
1659.....	3.	6.	0.	2.	8.	8.
1660.....	2.	16.	6.	1.	12.	8.
1661.....	3.	10.	0.	1.	13.	4.
1662.....	3.	14.	0.	2.	2.	0.
1663.....	2.	17.	0.	1.	12.	8.
1664.....	2.	0.	6.	1.	10.	0.
1665.....	2.	9.	4.	1.	8.	4.
1666.....	1.	16.	0.	1.	6.	0.
1667.....	1.	16.	0.	1.	2.	8.
1668.....	2.	0.	0.	1.	4.	0.
1669.....	2.	4.	4.	1.	7.	4.
1670.....	2.	1.	8.	1.	6.	6.
1671.....	2.	2.	0.	1.	5.	4.
1672.....	2.	1.	0.	1.	2.	0.
1673.....	2.	6.	8.	1.	4.	0.
1674.....	3.	8.	8.	1.	14.	0.
1675.....	3.	4.	8.	1.	14.	0.
1676.....	1.	18.	0.	1.	6.	0.
1677.....	2.	2.	0.	1.	8.	0.
1678.....	2.	19.	0.	1.	8.	8.
1679.....	3.	0.	0.	1.	6.	8.
1680.....	2.	5.	0.	1.	2.	8.
1681.....	2.	6.	8.	1.	4.	8.
1682.....	2.	4.	0.	1.	8.	0.
1683.....	2.	0.	0.	1.	8.	8.
1684.....	2.	4.	0.	1.	5.	4.
1685.....	2.	6.	8.	1.	8.	0.
1686.....	1.	14.	0.	1.	5.	4.
1687.....	1.	5.	2.	1.	4.	0.
1688.....	2.	6.	0.	1.	2.	0.
1689.....	1.	10.	0.	1.	0.	0.
1690.....	1.	14.	8.	0.	19.	4.
1691.....	1.	14.	0.	0.	17.	4.
1692.....	2.	6.	8.	1.	4.	4.
1693.....	3.	7.	8.	1.	10.	0.
1694.....	3.	4.	0.	1.	12.	0.
1695.....	2.	13.	0.	1.	12.	0.

And in this computation you are to know that in every Year there are two
prices of Corn the one at Lady-day the other at Michaelmas both which are
put together & the half is taken for the common price of that Year.

And in the Price of Malt the Tare of six Pence is not charged, which is an addition of 4 to every
cittle of the Malt from the Commencing of the Malt Tare.

NUMBER XXI.

A Letter to the Editors, from Charles Whitworth, Esq; Member of Parliament, on reducing the Price of Coals, and supplying the Poor and middling People, in Winter, at a cheap Rate.

GENTLEMEN,

AS the subject of this letter may come very properly under your plan, as a *Museum Commerciale*, I shall be very glad to have it communicated to your readers, in hopes that, from a due consideration of the benefit which may arise to the poor, in the ensuing winter, (more particularly, if it should prove a severe season) it may receive so far a sanction, as to produce some good effect*.

The useful hints given in the news-papers, and the many good regulations which have proceeded therefrom, induce me to write to you on a subject which has been much canvassed; but no remedy seems likely to be established to cure the evil. I mean the exorbitant price of the necessities of life, owing, I am much afraid, to combinations. But I do not intend to enter into so large a field, and shall confine myself at present to the article of coals, the provision for which is to be made in summer. I hope, therefore, persons will take into consideration what must be the misery of the poor and middling sort of people in case of a severe frost the ensuing winter; nor is it an inconsiderable matter to people in affluent circumstances, that their fuel should be at such an amazing price, much more than I imagine it ought to be afforded for; at least, it is worth while to make an experiment, the progress of which may bring the monopolists, if such there be in this article,

VOL. II. N^o. 7.

L

ticle,

* We readily embrace this opportunity of obliging a correspondent whose several communications have done honour to our work. It were much to be wished that so humane a proposal may be easily carried into execution: certain it is that many persons of distinguished rank have already desired to become subscribers; and if the intelligence of the news-papers might for once be relied on, the price of coals is at present reduced, and expected to be much more so, upon this excellent scheme being only in agitation. A.

ticle, to reason: and as whatever may be for the benefit of a community, should be publicly offered and made known, without any mysterious transactions to carry it on, I would propose that a set of gentlemen, of whom I will very willingly make one, should meet together, and take it under their cognizance, whether we cannot by subscriptions bring this article to its fair true price. I am very far from meaning to destroy the coal trade by underselling at a loss; but I would so order it, that whoever would sell at a moderate profit should have equal advantage, so that it may be continued during the winter; otherwise it will only promise an imaginary relief, and turn out a real injury. The method I would therefore point out is, that the subscribers should have an amount not exceeding half their subscription-money allowed in their own quantity of coals; and the remainder should be applied in procuring a stock to be sold out all the winter to the poor and middling people by the bushel, limiting a certain number of bushels at one time to each; since, as those persons cannot afford to buy more than may just serve for the week, or some short space of time, and the benefit of this plan is intended for them, yet, as it may induce persons to become contributors when themselves are interested, I propose that their own supply should be considered as far as one half, and the residue of their subscription-money paid when the end is fully answered, this being intended to relieve the industrious poor in an article so necessary to them.

If any gentlemen are inclined to contribute towards the execution hereof, and will apply to me in person, I will appoint a meeting to consider further of this subject, in hopes of carrying it to effect.

I have heard of a proposal to furnish house-keepers with coals at a moderate price, by engaging to take a quantity; but that does not answer the purpose hereby intended, for the relief and constant supply of the poor in winter, who cannot afford to engage before-hand, but are necessitated to purchase as their wages are paid, generally weekly.

I am, GENTLEMEN,

March 26, 1764.

A well-wisher to your work,

C. WHITWORTH.

NUMBER XXII.

Copy of a Letter sent to Dr. Templeman, Secretary to the Society for promoting Arts, &c. to be by him communicated to the Committee of Agriculture, in Recommendation of a new Manure.

SIR,

AS a farmer, like a chemist, should lose none of his materials, but make even his washings, runnings, and residuums, turn out to his advantage, I have sent you some account of an experiment I have made in manuring of land, which I beg you will lay before the committee of agriculture, that they may communicate it to others.

I am possessed, Sir, of a farm of near three hundred pounds a year, and have in my yard, what you usually see in most farmers yards, two recesses or pools, as reservoirs of dung and water. These reservoirs in wet weather are continually running over; and of course part of the matter contained in them is carried off, by the necessary drains, into the highways, ditches, and rivers.

As much of the essential quality of the dung is lost in this manner, (for part of the salts, whether fixed or volatile, will be washed into the pools, and when they over-run, will be conveyed into the ditches, &c.) I thought it a part of good husbandry to carry this superabundant water, or manure, (for so we may justly call it) on my land, which I did by means of a watering-cart *, not unlike those with which the roads near London are watered in the summer time to allay the dust.

That the experiment might be the more obvious and certain, I first tried it (in the beginning of March, 1763) on a few acres in the middle of a large meadow, and on some lands in the middle of a large field of wheat, where, in a little time, I found a considerable encrease, in growth, both of grass and grain; and at hay time and harvest, both

L 2

* See Volume the First, No. LVII. page 245; and No. XIV. page 51. of this Volume.

the one and the other were much better crops than what the same lands produced that were not so manured.

As a man, or even a boy, with one of these carts, and one horse, may manure a great deal of land in a day, provided it be near the yard, I would recommend the practice to all my brother farmers; for the expence is nothing, but the value of the time of the boy and the horse; and the encrease, by what I have seen, will be very great.

I have some other experiments in hand for the benefit of the farmer, and of the public, the result of which I shall, by your means, communicate to the society, and am,

S I R,

Your most obedient humble servant,

J. N.

P. S. This manure may be also laid, to great advantage, on land that is fresh sown with barley, oats, or any other grain; but on grass it should be only laid in the winter time, when the rains will wash the salts off the blade; or in the spring, when the lands are laid up for hay; as the cattle will not feed on the grass, while the dung, or salt, adheres to the blade of it.

This dung-water should likewise be carried on the land, not at a time when it rains, but in the dry weather, and at a time when the dung-water in the pools is of a deep brown colour, and strongly impregnated with salts. By this means the land may be manured from time to time, and the pools kept almost empty for the reception of fresh matter every time it rains; and nothing will be lost.

N U M B E R X X I I I .

A Letter to the Editors, containing a Method of effectually preventing the sudden Overflowing of little Rivers and Brooks by hasty Rains.

GENTLEMEN,

THE daily papers having been of late full of complaints of injuries caused by sudden floods, it may not be amiss to communicate to the public, by your means,

means, a short method of effectually preventing them in brooks and little rivers.

A flood is caused by a stoppage of the water in its course, so as to prevent its *running off* as fast as it *comes in*. Now, if the *egress*, or going out, be larger than the *ingress*, or coming in, that place can never be flooded. Thus, by opening the course of the river Welland, at Harborough, in Leicestershire, for a considerable way below the bridge, the river has never since risen out of its bed to overflow the town, as it used to do, before, upon almost every sudden hasty rain.

And this method the legislature has enforced by enacting, in most turnpike acts, that the commissioners should give notice, in writing, to the overseers of the highways of the several parishes where such brooks or rivers pass, to open their several currents, in order that the water may have a free passage; and in case they neglect so to do, the surveyor is ordered to hire men to perform the work, to pay them, and to charge the expence of such work to the account of the respective parish where there shall be such neglect; and the justices of the peace are ordered to levy the same by distress, and sale of goods.

Many very bad accidents have been occasioned frequently by such neglects: the author of this letter, himself, saw one Mr. Corbet *Acton*, a grocer, in Ludgate-Street, London, taken out of the wash in the parish of *South Mimms*, in the great road leading from London to St. Alban's, drowned in a flood, occasioned by a sudden dash of rain in the month of September, in the year 1758. If this letter has the good effect the writer wishes it may, to inform surveyors, and prevent such accidents for the future, it will amply answer the writer's end.

I am, GENTLEMEN,

London,

Your very humble servant,

March 19, 1764.

Y. Z.

NUMBER XXIV.

A Letter to the Editors, on the Method of fattening Geese to the best Advantage.

GENTLEMEN,

A Well-fatted goose is an excellent dish; and, in some farms, the country dames get a great deal of money in a year, by selling a number of them in the season. I am willing to teach them a method of fattening these birds, so as to give their flesh a higher flavour, and yet not cost them so much as they generally do before they are carried to market.

I must first premise, that the more quiet and undisturbed they are kept, the faster and better they fatten.

I shall begin with what are usually called *green geese*: these the country housewives seldom attempt fattening, on account of the imaginary difficulty, for they think all the meat they can give them, only makes them grow, in bulk, the faster.

Let these young geese be put in a place that is almost dark, and be fed with some ground malt, mixed up with milk; and they will, very soon, and at very little expence, be fit to kill: I have often tried this method, and have found them to eat very deliciously.

I sometimes fatten them in a still cheaper way, especially when milk is scarce with me: I mix up some barley meal pretty thick with water, which they constantly have by them to eat as they chuse: in another part of the shed, where they are kept, is a pan with some boiled oats and water, for them to resort to when they are inclined to change their food: this variety is agreeable to them, and they thrive apace, being so fatted at less expence than in any other manner I know of.

The manner in which I manage my Michaelmas, or stubble geese, is not very different from that above described: immediately after harvest I turn them on the wheat eddishes, where they pick up flesh apace; but when I take them up to fatten, I feed them with ground malt,

mixed

mixed up with water, and give them with it boiled oats, boiled malt, or boiled barley, and sometimes, for change, even boiled wheat and water. Thus managed, they grow fatter, and acquire a finer flavour than would at first be imagined, greatly superior to almost any I have seen in the London markets.

A neighbour of mine, some few years ago, gave me the following caution: he observed, that geese usually sit, especially in the night time, with their beaks or bills on their rumps, whence, he said, they suck out most of their moisture and fatness, by means of a small bunch of feathers, which stands upright on their rumps, and is always moist: he advised me always to cut away this bunch of feathers, before I put my geese up to fattening, which would occasion them to fatten in much less time, and with much less meat, than otherwise.

I have, it is true, followed his directions ever since, as I was sensible it could do no harm; but I own I do not perceive any saving in it: a great deal more, I believe, depends on the manner of feeding them, and the quality of the food you give them, after they are put up.

I cannot conclude this letter without informing you what I am told is the *Jewish* method of fattening this bird; which people are, by some, esteemed very skillful feeders of it.

The first step they take is, to wrap the goose up in linen; after which they stop her ears with peas, and hang her up in a dark place, where, neither hearing nor seeing any thing, she remains, as it were, in a state of stupidity; neither struggling nor crying.

After this preparation, they give her, three times a day, pellets, made of ground malt or barley, mixed up with water, setting, within her reach, water and gravel in a pan. In this manner do these people, as they say, make them so fat, that, without seeing it, one can scarcely form an idea of it.

As I have this only from information, I do not absolutely depend on the truth of the relation: it will, however, be easy for some of your London readers to inform themselves of the truth of it; and whether this is, or ever was, their method

method of fattening geese: living in the country, and having no Jews in my neighbourhood, I have no opportunity of making the enquiry myself.

I must however allow, that there is a possibility, if not a probability of its truth, as silence and darkness greatly forward, to my knowledge, the fattening of this delicious bird: I have some thoughts of making the experiment myself the next season; though I am sensible it will not do to adopt as a general practice, being too troublesome, as it would take up too much time to attend any number of them in this suspended state.

I fatten my ducks in the same manner as my geese, except that I allow them a large pan of water to dabble in; and I find it answer extremely well.

I have already detained you, perhaps, too long on a subject some of your readers may possibly think but little interesting; yet I must beg their patience for yet a little while.

I keep a very considerable number of ducks for breeders, having, near my house, the convenience of several ponds; and I annually set in the spring a great number of duck-eggs under hens: it is therefore natural I should chuse such a breed as will lay me a large store of eggs; and I have always found such as have their bills turn up rather more than ordinary, to answer this purpose best.

I am very sensible you will have in your collection (convinced by what I have already seen of it) many letters on subjects much more important than this; yet, as it is confessedly useful, and may serve as a lesson of instruction to farmers wives, who should be thought of as well as their husbands, I hope you will give it a place.

I expect others of your correspondents will soon follow my example, and improve these useful dames in the methods of making cheese and butter, which, though they may to some appear trifling, are subjects well worthy of being treated of in your excellent collection of papers.

I am, GENTLEMEN,

Essex,

Your obedient humble servant,

March 2, 1764.

A LANDHOLDER,

On the Borders of Epping Forest.

Museum Rusticum, &c.

For APRIL, 1764.

VOLUME the SECOND.

NUMBER XXV.

A Letter to the Editors, from a practical Farmer, being a Conclusion of the Account of the Culture and Management of Coleseed in the Fen Countries.—(See Vol. I. Number XCVII. Page 418, for the former Part.)

GENTLEMEN,

A GREENABLE to my promise in my last, I shall now proceed to the uses we put the coleseed to when it is arrived to its utmost perfection in the plant progression.

We eat it off with sheep that are about half or three parts fat, to make them fit for the butcher; for coleseed is the most fattening food for sheep that is known in this part of the world, greatly exceeding turneps, as a sheep will thrive more at coleseed in one month than it will at turneps in two.

The usual time of putting them in to the seed is about Michaelmas: that however depends upon the farmers own conveniency; but if the sheep are poorer than as above

VOL. II. N^o. 8.

M

described,

described, they must be put in sooner.—We generally manage so as to have the seed eaten off by about Old Candlemas, for this reason; if the land be stout and good, there is a chance for the seed to stand for a crop.

If the farmer finds the seed good enough to stand for a crop, I would advise him, if the stumps or stalks be left high, as where the coleseed is strong and good is mostly the case, to set a man to mow down the stumps within three or four inches of the ground; otherwise he will find his crop will receive great damage by the stumps being left very shagged and torn, which lets in the wet, and rots abundance of them; and even those that do grow have not the vigour as those have that are mowed, for the former is, as it were, spread to the snow and rain, while the latter is wholly secured from them both, and will support the sprouts, that shoot out at the sides, with strength and vigour.

I have now nothing more to offer till the coleseed comes into the flower, and begins to set the pod, in which the seed lies.

Notwithstanding we have got thus far, and have been flattering ourselves with the pleasing prospect of a fine and profitable crop, it too often happens we are awakened from the pleasure of this golden dream by a very small green fly, which so thickly besets the pod, that frequently a very promising crop is almost totally destroyed.

But as we have upon a supposition escaped all other dangers, we will suppose ourselves so happy as to escape this also, and will proceed to reaping and threshing.

Coleseed is a seed that will shed or shale very greatly, if it is not reaped in proper time; from which great losses have been known where the farmer has thoughtlessly let it stand too long before he begins to reap.

If the season has been kind, that the crop comes on all together, (though we often see the contrary) the farmer is, in either of these cases, as soon as he perceives any part of it to turn brownish, to begin to cut, notwithstanding the generality of the seed will be green; but if you let the whole

whole stand till the last becomes brown, like the first, the first part will be entirely lost.

But it will perhaps be said, Should not the latter part be as ripe as the first? My reply is, As coleseed is a small seed, and the stalks on which it grows are very large, the stalk will feed that part that is green, after it is reaped; so as that the latter will be nearly equal to the first; by which means both are saved.

There is a particular method of laying it on the ground, when reaped, different from all other crops; for instance, suppose the people reaping a field from north to south, every two men should lay in his reaps, with the heads of the seed to each other, but not to touch, the heads and the ends of the stalks lying east and west.

As we have now reaped it, the next step is the threshing.

The distance of time between reaping and threshing depends so entirely upon the weather, that it is impossible to give particular directions in that matter, otherwise than that when the seed has lain till the stalk or straw is dead, and turned white, and the seed, some of it being rubbed out of the *cosh*, appears black and plump, and does readily come out, then is the time to begin to thresh.

Though the bottom of the reaps will be a little greenish, they must not be turned to weather the under side; if you do, it will brush out a great deal of the top side: and if the weather should prove wet in the time it is threshing, even in that case it must not be turned, but raised up gently and laid lightly on the stubs; in that situation it will dry apace: it is commonly done in the morning of threshing, as by such time the bolster is made, and the people have breakfasted, the first raised will be fit to begin upon.

It is always threshed in the field, upon a cloth about twenty yards long, and eighteen yards wide. To describe each person's employment, I think, is not to be done, so that a person that never saw it can have an idea of it; but, as it is, I think, (if every person concerned in a *coleseed sale*, for that is the name we give the cloth and people

when at work, be clever in their places) a curious piece of mechanism, if I may be allowed the expression, where men and women are instead of wheels and pullies, I will, as well as I can, give your readers a short sketch of their proceedings.

The number of people employed at a coleseed sale are, generally, about twenty : seven *gatherers* ; these are women, great boys and girls : I have said seven ; but where the crop is thin, it requires more, sometimes eight or ten, or more ; but where the crop is thick, a less number may do ; that I mention as a kind of average : these people gather the reaps up with a sickle, for, as their arms cannot reach round the reaps, they would squeeze it together, and brush a deal of seed out, if they had no sickle : they put it into a sheet called a *bearing-sheet*, of which there are two belonging to every sale ; it is about ten feet long, and about seven feet wide, and has loops on each side, through which a light pole is put, and is carried (when filled) by two stout men to the cloth : these are called the *bearers*.

When the seed is laid on the cloth, there is a man called the *layer-on* : he with a sickle lays it on in a row, across the cloth, for the *threshers*, which are four, two on each side the row of seed. While the threshers are threshing the first row, or floor, the layer-on lays on another row at a proper distance from the other : when they have threshed the first row once over, a woman with a rake-shaft, or some such thing, follows the threshers and turns it : when they have threshed the second once over, they turn to the first, and thresh it all a second time : they have then done their parts ; but as the threshers go over it the second and last time, there are two men, called *shakers-off*, that immediately follow the threshers : the first of them throws the coleseed straw up ; the other strikes it as it rises, which helps to knock out what seed may be left : these two men, with wooden forks for that purpose, convey the straw off the cloth, over the bolster, to a person that takes it away ; he is called the *Jack straw*.

I must now turn back to the *shakers-off*. After them come two people, one a woman : they rake off the cosbes,

or pods, and short broken straws, with rakes made for that purpose: these are called the *before* and *behind cavers*. The *behind caver* is a very busy and hard work, if done cleverly as it ought to be; and upon whom depends the saving, or throwing away, a great deal of seed; so that he is commonly a nimble and brisk fellow, and careful too, or he is by no means fit for that place.

We will now suppose we have threshed one day's work. If the seed be a good crop, and yield well, and the weather bright, that the seed thresh well, thirty * combs may be threshed, sometimes more: as this may be done in a good crop, I have known, in a bad crop, not more than ten or twelve combs threshed in a day.

The method of cleaning the seed is, the four threshers, and others if they chuse it, go early next morning, and cast it on the cloth, when the farmer, with sacks and a waggon, takes it away, that the cloth is cleared and ready against the people come to work. The threshers and their assistants are paid for cleaning or dressing the seed, by the last, which is twenty-one comb, over and above their day-wages.

The farmer should take care his sacks be whole and strong, or it will run out at a small hole.

From the many hazards that coleseed is subject to, it is a saying in the fens, that *coleseed is never got till the farmer has got the money for it in his pocket*.

Notwithstanding I have taken a little trouble to describe the various employments of the people at work in a coleseed sale, I doubt but few that never saw such a thing can have any idea of it, for it certainly is the most curious and entertaining sight (when each person perfectly knows his or her part, and stirs briskly in it) in the rural scenes of life.

I have

* A comb is four Winchester bushels, but our measure is mostly eight gallons and a quart.

I have now, as I promised, gone through the various progressive steps of the agriculture of coleseed in the fens, from the plow to the merchant*.

I am,

GENTLEMEN,

Your most humble servant,

J. J.

P. S. I should, when I was speaking of the bearers in a coleseed sale, have told you, that instead of bearers, some people use what they call coleseed carts, with one horse: they are made wide and long, as conveniency will admit of, (as I never used any, I cannot exactly say the size) with a sheet laid into it, into which they gather the coleseed; but as they are ungain to empty on the cloth, and require more help than the boy that leads the horse, they are not much used. If we have no less than seven comb an acre, we do not call it a bad crop. The value of it depends upon the price, which fluctuates much.

NUMBER XXVI.

To the Editors of the MUSEUM RUSTICUM.

GENTLEMEN,

I HAVE transcribed the certificate sent to the society for the encouragement of arts, manufactures, and commerce, relative to the success that attended the trials made last harvest, in Northamptonshire, of mowing wheat in a new way; and, as I judge it will not be an unacceptable article in your book, I have sent it to you to insert, if you think proper. I am,

GENTLEMEN,

Your humble servant,

Y. Z.

A Certi-

* We hope this gentleman will frequently favour us with his thoughts. O.

A Certificate from several intelligent Farmers, and others, living in Northamptonshire, respecting the Advantages of the Hainault Scythe, which they saw tried last Harvest, in mowing Wheat.

WE whose names are hereunto subscribed have seen, and most of us personally tried, the use of the Hainault scythe, brought to us by Mr. Roland Charles Breaux; and we declare as follows: That a labourer here may cut wheat near twice as fast with this scythe as he can with a sickle; and allowance should be made for a labourer here not being so well accustomed to the use of this scythe, as of the sickle: the work is much easier, it is much neater done, it leaves no waste, and the straw is cut within two inches of the ground; and if the binders are ready laid, children can tie the sheaves, and then they are ready for carriage; for he who cuts, collects the wheat with his hook, as he goes, and lays it regularly on the binders; whereas the sickle leaves six, or eight, or nine inches of stubble.

The objections that we have heard made to the use of the scythe are, (*viz.*)

First, That it leaves no stubble, an useful material for thatching.

Secondly, That the weeds are gathered with the wheat.

Thirdly, That the gleaners get less than when they follow the sickle, and that is hard upon the poor.

To which objections we give the following answers.

First, That long straw is better than stubble for thatching; that long straw is by this method furnished; neither is the straw threshed, as has been supposed, for the sheaf is threshed only where the ear is; the rest remains entire, and the sheaves are not untied: therefore there is more straw, and it is better for thatching.

Secondly, In the country where this scythe is used, as we are told, the poor, who would otherwise collect the straggled corn, have it delivered to them ready collected;

and as the quantity of corn inned by this method is much
* greater, the price of it consequently is less, whereby the
poor man is greatly eased in buying his bread.

Thirdly, The weeds are gathered with the wheat. True ;
but when they come to be dry, they easily shake out : be-
sides, Mr. Roland says, that in his country they leave,
if the weather be fair, the sheaves in the field for two or
three days, that the weeds may dry, and that the dew may
plump the ear.

Mr. Roland farther informs us, and we know how to
perform it, that the sheaves of wheat may be kept from
the injuries they would receive from the damp of the
earth, by placing them in the following manner.

Suppose three tobacco-pipes, the bowl to represent the
straw end of a wheat-sheaf, the little end to represent that
where the ears are : lay the pipe down ; lay the little end
of another over the part of the first which is near the bowl ;
lay a third down in a triangle, so that the little end of that
may lie over the bowl end of the second, and the bowl
end of the third lie under the little end of the first : then
will the little ends, which represent the ears, never touch
the ground, and consequently will be kept dry.

We take this opportunity of declaring, that we think
ourselves obliged to Mr. Roland Charles Breaux for his
instructions, his civil behaviour and communicative dis-
position towards us, which we do hereby acknowledge
and give our testimony of.

Witness our hands, this 12th day of September, 1763.

W. P.	J. H.	E. E.
A. F.	J. W.	W. H.
V. B.	R. B.	R. C.
R. L.	W. B.	R. W.
W. R.		

* Said to be one-eighth more ; but that cannot certainly be
known ; but it may be very safely affirmed, that it is much
more. Y. Z.

N U M-

NUMBER XXVII.

A Letter to the Editors, on a Method of making Mead, that will be nearly as good as some foreign Wines.

GENTLEMEN,

I Imagine it will not be disagreeable to you, to receive a letter on the subject of making good mead: it is a liquor many are fond of, and universally allowed to be very wholesome.

I have several methods of making it, according to the degree of strength I would have it of; and, I believe, I may venture to say that few people can give their friends a glass of better mead. I am fond of it myself, because it is a truly *English liquor*, and, I believe, as well suited as any to a robust English constitution.

My first and best sort I make as follows. Of this I make generally a hoghead every year. To one hundred and twenty gallons of pure water, the softer the better, I put fifteen gallons of clarified honey. When the honey is well mixed with the water, I fill my copper, the same I use for brewing, which holds only sixty gallons, and boil it till it is reduced about a fourth part: I then draw it off, and boil the remainder of the liquor in the same manner. When this last is about a fourth part wasted, I fill up the copper with some of that which was first boiled, and continue boiling it, and filling it up, till the copper contains the whole of the liquor, or must; by which time it is of course half evaporated.

I must observe that, in boiling, I never take off the scum; but, on the contrary, have it well mixed with the liquor, whilst boiling, by means of a jet.

When this is done, I draw it off into under-backs by a cock at the bottom of the copper, where I let it remain till it is only as warm as new milk. At this time I tun it up, and suffer it to ferment in the vessel, where it will form a thick head. As soon as it has done working, I stop it

down very close, in order to keep the air from it as much as possible.

I keep this, as well as all my mead, in a cellar, or vault, I have for the purpose, being very deep and cool, and the door shuts so close, as to keep out, in a manner, all the outward air; so that the liquor is always in the same temperature, being not at all affected by change of weather: and to this I attribute, in a great measure, the goodness of my mead.

Before I had this vault dug and made, I used to bury my casks deep in the ground, as the Romans served their wines, leaving them so buried three months at least. This, I found, was of great service in mellowing the liquor; but it ruined my casks so, that I was in a few years tired of the practice, and made the vault above mentioned.

Another proportion I have of making mead is, to allow eighty pounds of purified honey to one hundred and twenty gallons of soft water, which I manage, in the making, in all respects, like that first above mentioned; and it proves very pleasant, good, light drinking, and is by many preferred to the other, which is much richer, and has a fuller flavour; but at the same time it is more inebriating, and apt to make the head ach if drank in too large quantities: therefore, upon the whole, I imagine the last to be the proportion that makes the wholesomest liquor for common drinking, the other being rather, when properly preserved, a rich cordial, something like fine old Malaga, which, when in perfection, is esteemed the best of the Spanish wines.

I chuse, in general, to have this liquor pure and genuine, though many love it best when it has an aromatic flavour.—Such mix elder, rosemary, and marjoram flowers with it, and use cinnamon, cloves, ginger, pepper, and cardamoms, in various proportions according to their taste. Others put in a mixture of thyme, eglantine, marjoram, and rosemary, with various spices; but I do not approve this last practice at all, as green herbs are apt to make
mead

mead drink flat, and too many cloves, besides influencing it greatly in the taste, make it high coloured.

I never bottle my mead before it is half a year old, and, when I do, I take care to have it well corked, and keep it in the same vault wherein it stood whilst in the cask.

I am, GENTLEMEN,

Surry,

Your humble servant,

Feb. 29, 1764.

A RUSTICATED STUDENT.

NUMBER XXVIII.

A Letter to the Editors, on the Method of raising fine Strawberries, Gooseberries, and Currants.

GENTLEMEN,

HAVING many years ago retired from a life of business to spend the remainder of my days in the country, it was natural for me to take some delight in having my garden well stored with at least the ordinary kinds of fruit: I am not very fond of such as require a great deal of trouble, and are very expensive in their cultivation, being sensible that, when brought to maturity, they afford, at best, but a momentary gratification.

Some of your readers may, perhaps, be surprised at my taste being so depraved; but yet, I assure you, that I prefer fine strawberries to pine-apples, and I am sure they are to be procured at much less expence.

I have of them of several kinds; and the fruit, in the season, is in great perfection, being large, and possessing a fine flavour. These I procure with no great trouble or difficulty in the cultivation.

I plant them in regular rows on beds three feet wide. The soil I chuse for them is a good, natural, fresh, rich loam: the less it requires of manure the better, the fruit being the sweeter and finer.

On each of these beds above mentioned, I plant three rows of plants, in quincunx order, at fifteen inches distance

every way ; and I rather chuse to plant them each on a little hillock, as it were, something in imitation of hops.

Between the beds are intervals of the same width.

My next care is, by frequent hoeing, to keep my plants as clear from weeds as possible, by which they are sure to be supplied with plenty of nourishment ; a matter of great consequence, particularly when the fruit is set, as then they require most, and the weeds are also at that season most luxuriant : I therefore then stir the earth with the hoe often, which answers, as I said before, a double purpose.

I observe to keep my plants as clear as possible from runners ; by which means my fruit is larger, and sooner ripe, than it would otherwise be.

When my strawberry plants have borne fruit two successive years on the beds, I get the alleys, or intervals, dug up and prepared, into which I transplant them in the same manner they were planted in the first-mentioned beds, which then become in their turn the intervals.

Here they remain two years more, when I again remove them into fresh land prepared for the purpose, in this manner never letting them bear fruit more than two years in one spot.

I cannot easily describe to you the great benefit this method of management is of to the plants, which are thereby greatly invigorated, and the fruit prodigiously improved, both in point of size and flavour, insomuch that they appear to be quite of a different nature from those of my neighbours, who first furnished me with the plants.

I am not less careful with respect to my gooseberries and currants, which under my management are both excellent fruits.

I generally cultivate these together in the same plantation, planting them alternately in rows, allowing each tree six feet space every way to grow in.

In the observations I have made on some of my neighbours gardens, I have long found that the principal cause of
their

their having such wretched, crabbed, and small gooseberries and currants, was their suffering their trees to grow too thick and bushy ; by which means the fruit could not possibly enjoy benefit enough from the air and sun to be brought to a due state of maturity.

This induced me to try other methods, and I at length succeeded to admiration, by only keeping the trees thin of branches, by continually rubbing off the buds in the spring, and stirring the earth frequently about their roots during the course of the summer.

This method is very easy, very practicable, and very successful. Permit me, therefore, to recommend it to such of your readers as like these common sorts of fruit ; though mine, I assure you, are far beyond any that are in common to be met with.

I must not forget to tell you that in all these kinds of fruits, *viz.* strawberries, gooseberries, and currants, if the weather happens to be very dry just after they have blossomed, and the fruit is about to knit or set, I bestow a watering or two, which I find to be always of very great benefit, occasioning them to bear much more plentifully than they would otherwise do.

My plants, being in such good heart, are seldom affected by the winter's frosts ; yet, if the north-easterly winds blow very sharp, I generally cover my strawberry beds thinly over with pease haulm, which I take away early in the spring.

As I am remarkably fond of strawberries, it is no wonder I should desire to keep them as long in bearing as possible ; and to effect this, as I have a large number of plants, when they blow in the spring, I cause the blossoms to be picked off the plants of every other bed alternately. These plants, thus robbed of their early blossom, in due time put forth others ; and by this simple management I enjoy my favourite fruit almost all the summer and autumn, and have even gathered them in the beginning of the month of October.

I men-

I mentioned above, that I keep my gooseberry and currant trees very thin of branches; yet, lest I should not be perfectly understood in this point, I shall explain myself a little.

The first year after planting, I permit only three or four branches to grow on each tree: these encrease by degrees, till about the third year, when there may be about twelve wide-spread branches on each tree; I scarcely ever suffer more; and I take care to keep them in a position as horizontal as possible, for the motion of the sap being thereby retarded, they bear a larger burthen of fruit.

I have only, before I conclude, to tell you that I permit nothing to be sown, or planted, in the vacant spaces betwixt my gooseberry and currant trees: I have plenty of garden ground, and have no occasion to do it; besides, I think, it would hurt my fruit. I keep these spaces, however, always very clean from weeds. I am,

GENTLEMEN,

Near Bury, Suffolk,

Your humble servant,

March 1st, 1764.

A QUONDAM MERCHANT.

NUMBER XXIX.

Cautions about mowing of Wheat, and Remarks on the Price of Labour in Harvest, in a Letter from the Reverend Mr. Comber to the Editors.

GENTLEMEN,

I SIT down to give you my cautions about the gatherers after mowers of wheat, and remarks on the price of work-people in harvest.

One, and I think the *principal*, if not *sole* advantage of mowing wheat, arises from the expedition of the work. One of your correspondents has represented this advantage thus, *viz.* that a mower will go *twice* as fast as he could with his sickle.

But, I apprehend, if he went not faster* than this, it would scarce be worth the while to employ a mower, when the difference betwixt his wages and those of a shearer and their attendants wages is considered.

In order to profit by this method of cutting corn, we must dispose every thing so as to promote the mower's expedition; and as this very principally depends upon the dexterity and quickness of his attendants, the following cautions must be carefully observed.

First, To associate the strongest, most dextrous, and quickest mowers, with attendants of correspondent characters, because otherwise the work will be greatly delayed.

Secondly, To place the strongest, most dextrous, and quickest mower, with his attendants, in the van; and the rest according to their strength, &c. for the same obvious reason; as a delay in any mower, &c. delays equally all who follow.

Thirdly, To let the first mower and his attendants *set-in* well before the second follow, and so on. By a contrary practice, hurry and confusion are created, the corn is ill gathered, and mischief is often done to the mowers or gatherers.

Fourthly, To check all evil emulation, which may make a following mower incline to press upon his predecessor, and create the hurry, &c. spoke of just-now.

In these cautions, I have spoke of every mower as followed by *attendants*. Now as in the method of Mons. de L'Isle, every mower has only *one* attendant, this circumstance may by the *ignorant* and *inattentive* be thought a great advantage of the *foreign* over the *domestic* method of mowing wheat. But when the whole is considered, I am
of

* I have now a labourer of veracity, who goes every year to the wolds, and assures me, that he has frequently mown the length of three miles; and as he returned the same length with his scythe on his shoulder, he walked every day six miles, besides twice the distance from the dwelling-house to the field.
COMB.

of opinion this will appear so far from an *advantageous saving*, that it will be thought by impartial judges an *injudicious one*.

A crop so valuable as wheat should never be reaped till it is as ripe as it can be without shaking off; and then the point of prudence is, to get it under cover from those sudden rains which attend harvest, as soon as possible.

To this end it should be put in sheaf, and then stooked so as to cover the other sheaves with the two head ones, as soon as possible*.

It must then be bound without delay; and for this purpose a binder must follow every mower, if the crop is good. However, if he be strong and active, he will find time frequently to assist the *gatherer* or *layer-in*; as he is called, who without his help will frequently be unable, however strong and active, to attend on his mower.

The manner of laying the *wads* or *handfuls* recommended, Gentlemen, by your correspondents and selves, is, no doubt, the best which that sort of management admits; but, for the reasons above given, (and others which might be added) not comparable to the method of binding and stooking after the mowers.

I may add to the former cautions two of consequence to be remembered.

Fifthly, Since so much of the advantage of mowing of corn arises from the expedition of the work, (time in harvest being very valuable) the judicious farmer ought to employ as many *men*, and the *strongest women* he can engage, in attendance on his mowers, as are necessary.

Sixthly, He should be peculiarly careful to have binders enough, otherwise, as mowing makes his straw very long, his bands will take too great a quantity for one sheaf † to allow

* For a method of stacking, or stooking, corn in the field, see page 35 of this Volume. E.

† This may easily be avoided, provided the people who make the bands tie them somewhat shorter than usual, which is easily done, and the bands will by that means be stronger, and less apt to untie at the ear. O.

allow a free course of drying air while it has field room; and the binder, who finds himself hurried, will force together all he can; and by this means the bands will often break in loading or unloading, and great loss ensue.

It appears then, Gentlemen, I hope sufficiently, that the foreign method, of allowing but *one* attendant to each mower of wheat, is not really a *saving of expence*, but an injudicious delay of it; for the corn must be *gathered* before it can be housed*.

I will now give you, Gentlemen, my remarks on the price of work-people, as relative to this subject.

Our wise legislature, sensible of the great dependence which the state has on agriculture, have from time to time, as occasion seemed to require, used endeavours to secure work-people in harvest.

They have obliged mechanics to desert their respective trades at that season, and put their hands to the *sickle*, without which, neither they nor their trades can be upheld. They have forbid day-labourers to desert their respective parishes, without certificates from the minister, &c. that they are not needed in those parishes for the harvest.

But, however wise our legislature has been, the magistrates, to whose care the execution of the laws is given, have been so remiss in this respect, as well as many others, that the evil is become, at least in this part of the world, a crying one, and will be attended with the worst consequences to agriculture and the state, if not speedily prevented.

VOL. II. N^o. 8.

O

The

* It is certainly an advantage to get the corn housed as soon as possible after it is cut, provided it is in a proper condition; but if it happens to be weedy, it may be necessary to let it lie in wads a day or two without binding. In this case the foreign method has the advantage, as more attendants than one to each mower would be unnecessary. When the weeds are sufficiently withered, the wads may very easily be bound, as three of them disposed in a triangle, as recommended in this method, will, when united and bound, form a good-sized sheaf. O.

The making it *public* is one of the most likely steps to reformation of any evil; and this is a strong motive to my publication by your channel.

The farmers on the Wolds depend so entirely, for the support of themselves and cattle, on crops of corn, that they are obliged to give any wages to work-people from the circumjacent country.

The custom is, to resort to the markets at Malton, &c. and contract with the labourers who come thither with scythes, &c. for a month or more, as their occasions require, convey them home on horseback, keep them well with meat and drink, and work them almost day and night. It is usual for a mower to get ten shillings, and above, *per* week, with meat, drink, washing and lodging; a binder, nearly as much; and women for gatherers, six shillings, or more, with meat, &c.

Now, as the climate of the Wolds differs very little from ours, their harvests greatly interfere with ours; and it is very usual for this whole country to be, during a considerable part of harvest, deprived of its best work-people; for not only the common labourers in husbandry resort to these hirings, but mechanics of all the lower sorts, who find the clear wages here given much better than the precarious profits of their several businesses, and an agreeable variation of labour.

Thus are we left to struggle through our harvests with the poor help of our most aged and infirm labourers, and are obliged to give for them, coming at *late*, and departing at *early* hours, greater wages than we ought to give for the youngest and ablest work-people, were they restrained to their own neighbourhood.

Of the many evils resulting hence I shall mention a few.

First, Our harvests, especially in difficult seasons, are got in *late*, and *ill*, and the profit of the crop amazingly sunk.

Secondly, Our farmers, finding that they cannot depend on their neighbours for assistance in harvest, hire more servants

wants by the year than they would otherwise need; and hence their profit is again sunk.

Thirdly, The price of servants by the year is hereby greatly raised, and consequently the farmer's profit much lessened, if not quite absorbed. How the insolence and idleness of servants rise with their wages, and augment the former evils, is well known. Nor is it less notorious that the security of the landlord's rent depends on the profits of the farmer, and the credit of the state; and its real strength, on the credit and plenty of the land-owners. Yet the minister, &c. let our strongest and best labourers go to the Wolds without certificates, or even rebukes; and no magistrate treats them, thus going, as (what they are by law) vagrants.

Several concurring causes of this shameful neglect might be assigned. But to conclude, by a return to the original subject, it seems probable that this growing evil, if indulged, will bring into this country the practice of mowing both *wheat* and *rye*; otherwise our crops must soon rot on the ground*. I am,

GENTLEMEN,

East-Newton,

Your humble servant,

Jan. 20, 1764.

THO. COMBER, Junior.

* It is a pity there should be any necessity of thus driving, as it were, the farmers about Malton to consult their own interest. Though they have long seen the advantages resulting from mowing wheat in the practice of the farmers in the Wolds, nothing but absolutely feeling the inconvenience of their old methods can induce them to adopt others; so infatuated are people in this way, and so riveted to old customs, that no persuasion, no examples, can put them out of their track, unless they feel to some purpose the inconvenience of still pursuing it. O.

NUMBER XXX.

Of some probable Improvements in the Culture of Horse-Beans, in a Letter from the Reverend Mr. Comber to the Editors.*

GENTLEMEN,

THOUGH the nature of the soil which I occupy is not fit for the growth of beans, and the farmers of such land as is fit are with the utmost difficulty, if at all, persuaded to try any new methods, and, in consequence of their prejudices against innovations, seldom, if ever, make the experiment fairly; yet I will venture to recommend, chiefly on the probability of them, three improvements in the culture of this crop, which often proves very valuable; one, in the method of *sowing* or *planting* them; another, in the management of them when *growing*; and the last, in the *reaping* of them.

First, The sowing or planting of horse-beans with a dibble is recommended in your work, and very rationally, in comparison of sowing with the hand; a method very unfit for dispersing so heavy a seed, which by this means often falls very irregularly; and as it requires great nourishment, the crop is hereby often considerably injured, some parts

* We are very sorry Mr. Comber should have reason to be offended with any of our notes; but this we can venture to affirm, that no offence was intended, and was he personally acquainted with the gentleman who added the notes in question, he would be of the same opinion. This gentleman is now in the country, yet we can take upon us to answer for his not giving Mr. Comber any future cause of reprehension. We must once more thank this gentleman for his several valuable communications, and hope for a continuance of his favour; and he may be assured that, if such is his desire, his letters shall be printed without any notes whatever annexed to them. The pieces he mentions to have in hand will be very acceptable whenever he pleases to send them. E. R.

parts of the land being unable to bring to perfection the quantity which falls on them, and other parts of the land lying idle. Yet the dibble is a *slow* and *irregular* instrument in comparison of another, for which I know not a name, but which will easily be understood by the following description.

Take a plank of oak, or other wood, of such length and breadth as a man can easily manage by an handle fixed in it upright, and of such thickness as to be firm in the working. Drive into the under side of this plank wooden pegs of such thickness, length, and distance from each other, as, from a consideration of the soil and other circumstances, seems likely to form proper beds in the ground for the beans; when the instrument is struck into the ground by the workmen, who, when the land is properly prepared for *sowing*, or *planting*, (call it which you will) must begin at one end of his land next the furrow, and when he has struck his instrument once into the ground, and taken it out, must direct it, in the second stroke, so as to fall in as nearly as he can with the last impression, so that the interstice betwixt the last row of holes, made by the first impression, and the first of the second, may not be considerably different from the interstices betwixt any rows in any one impression.

The intelligent readers, Gentlemen, need not, perhaps, be told, that, in order to perform this work properly, the labourer must not work forwards, since by this means he would tread up the holes he made; but either backwards, or (as that motion is somewise unnatural and disagreeable) rather sideways. Nor can it be necessary to say to such readers, that when the workman comes to the end of his lands, he must observe in his return the same rule for his instrument, in its sideway position, as before, and now also in its end position, *viz.* to leave as nearly as he can, without too much anxiety, the same interstice betwixt the rows of holes.

The least children, who can be taught to have sufficient attention to put a bean into every hole in the rows assigned them, may be able to follow him; and though this may
seem

seem a *slow*, and therefore *expensive* method of *sowing*, yet when it is considered that only one man is employed, and that the children who follow will be hired for small wages, that seed is hereby saved, and that the crop will be regular, I am persuaded that it is a probable improvement; and I am told that something of this kind is actually done in *Hertfordshire*, and particularly about *Royston*, though I have never been able to stay long enough to ascertain the circumstances.

Secondly, It is well known that gardeners use to lop the tops of beans, and for good reasons; *viz.* that the topmost blossoms hardly ever come nearly to perfection; or, if they do form pods and beans, these are *so small* and *backward*, as to be worth little; and that the taking away these enables the sap to make the lower blossoms and pods far more vigorous.

The same reasons hold indisputably for the same management of horse-beans in fields, if it can be contrived to take place without great inconvenience; which, I think, Gentlemen, it may do by the following method.

The furrows of strong lands (such alone are fit for the growth of beans) should be always kept large and open; otherwise, in the early season of sowing beans, the ground will be too wet to work properly. For the same reason the lands should not be very broad, that the water may easily descend in winter into the furrows, without having very high ridges, a great fault in strong lands, which by such means easily *bark* and *chap* in summer.

These circumstances will afford two conveniences for the performance of the proposed operation, which I would have done by garden-shears.

The one is, that the furrows will be wide enough to admit a careful person of moderate size to go up them without doing considerable harm to the blossoms adjoining to the sides of the furrow; the other is, that he will be able to reach to the ridge of the land with his shears at one cutting, especially as he may have very light shears on purpose
for

for this work, which will consequently be manageable with much longer handles.

I shall not presume to determine whether it is more advisable for the workman to turn from side to side, so as to lop the two halves of two lands in once going up or down the common furrow, or to return to work on the other land when he has finished the former; yet the latter method seems preferable, as the workman will probably, in his return, restore, by a contrary motion, some stalks which he may have swayed by his body or clothes in his former walk.

I should also advise this operation to be performed when the blossoms towards the bottom of the stalks first appear, for many reasons, *viz.* that by this caution the blossoms will suffer less from the workman's body and clothes, and the fall of the tops; that less sap will be lost, and the lower blossoms become more vigorous.

I have only to add, that the cuttings which fall among the stalks will afford some covering to the ground from the heat of the sun, and consequently, in some degree, prevent the chapping of the earth, and retain the moisture which falls, and gradually become a manure.

Thirdly, It is the known practice of gardeners to pluck their beans for seed up by the roots, and set them in heaps to dry. This practice I would recommend to the farmer, as it will be found not much more chargeable than cutting of them, and is attended with seemingly-considerable advantages: for when beans are cut, they must be nearly ripe; otherwise, having no longer any nourishment from the root, they will thin amazingly: but if they are cut when ripe, or nearly ripe, the pods lose great quantities of the seed in the operation, and conveyance home. On the contrary, beans, if plucked a considerable time before they are ripe, with the roots, will receive nourishment enough to ripen them fully, and lose no seed.

I agree with your correspondent entirely, in carrying them, as soon as reaped, on to some other land; and I should advise that to be a *near-eaten* piece of ground, adjoining to
the

the place where they are to be stacked; so that, when they seem sufficiently ripe, they may be stacked, and the beans, which then shake out, swept up without loss.

Bean-straw is hardly fodder for any cattle whatever, except in great necessity. Although, therefore, the roots be plucked up with the stalk, the straw will sufficiently answer its best purpose, viz. bedding and manure.

I am,

GENTLEMEN,

Your humble servant,

East-Newton,

THO. COMBER, Junior.

Feb. 9, 1764.

NUMBER XXXI.

A Letter from a Gentleman in Suffex, to Mr. Rocque, on Burnet and Lucern, describing the Nature of Slecch, and containing an easy Remedy for Cattle that are blown or hosed by Lucern, &c.

SIR,

I HOPE you will excuse the trouble of a letter from a perfect stranger to your person, though not to your name, which I see very frequently mentioned with great applause, in the *Museum Rusticum*, which I have with much pleasure taken from the first commencement.

I think the plan is useful, and the subjects, in general, very entertaining, and hope it will be continued with the same spirit it is begun with.

I find you have made the culture of artificial grasses more particularly your study, and two especially of the foreign sort, which we in this country are absolute strangers to; I mean lucern, and burnet: the latter, I must confess, I never heard of till I met with some account of it in the *Museum Rusticum*; but the other I have seen tried by some few farmers about Maidstone, by way of experiment only: I wish I could see it brought into more general use.

I live

I live in the most eastern part of Suffex, where, I believe, neither of those grasses have been yet seen (except a few roots in a garden); and have a great desire to try one of them this year.

The land I use is of two very different kinds; the upland, a remarkably light and deep sandy loam; the marshland, a very stiff *fleech*; both strong, though exceeding foul by negligence in husbandry.

As you live so far from the sea, the word *fleech* may require some explanation.

As the sea left the marshes by degrees, the *tides* brought up the mud with them, and swerved to the depth, at some places, of six or eight feet; which mud we call *fleech*. It is exceedingly replete with salts, and is, either of itself, or by mixing with other land, capable of bearing the greatest crops of any manure whatever. It is indeed apt, at first, to run too much to straw, but never needs any amendment. With good husbandry, and now and then a fellow to clear it of weeds, it will bear for ever.

I have a piece of the upland of five acres, which last year bore a crop of wheat: I have plowed it once, and intend to stir it three times more before I sow it; by which, and the harrow, I hope in good measure to clear it of the couch, with which it abounds. By the beginning of May, I propose to put in fourteen pounds of lucern, and two bushels of oats on an acre. I think that is the quantity you direct. If I am wrong, I shall take it extremely kind that you will correct me.

I should be glad to try a less piece than five acres at first; but I have none smaller. However, if it succeeds, I shall be the better pleased; and should it fail, I shall be less vexed on account of the loss of the ground, than the sneers of my neighbours, who, I am satisfied, will be well pleased at the ill success of any experiment out of the common way of business.

For my own part, I have a great opinion of lucern, and, from what you say, likewise of burnet. I am resolved to try it another year, if the lucern succeeds this; if not, I

must lay aside experiments, or I shall be marked for a schemer.

I must beg you will inform me, whether stiff ground will answer for burnet: I have a great deal more of that in tillage, and can better spare a few acres for a trial.

The sleet is sufficiently deep, and strong enough to bear any thing, and I will use my utmost endeavours to clear it of rubbish. If you think that sort of land is proper for burnet, I shall be much obliged to you if you will explain to me the nature of the plant, and your method of raising it.

I am, in a manner, obliged to apply to you; for I know no one else that can give me the information I desire, or supply me with the seed, of which I desire to know the proper quantity on an acre, and the price, as well as the price of lucern seed, which, I hope, you can supply me with, or inform me where I can procure it.

I know I could have the seed from London, or from France, which I am much nearer to; but then I cannot depend on the goodness, which is more material to me than the price; and I make no doubt but you will let me have it on the same terms you let others.

I fancy there is one objection to these grasses; which is blowing, or, as some call it, hoving cattle when they are at first turned in; but as I know an infallible remedy for that disorder, if applied in time, I am easy on that score. I ought indeed, in compliance with the plan of the *Museum Rusticum*, to mention it, though it is so simple I fear it will be disregarded.

When a bullock is so much swoln that he cannot dung, and moving is painful to him, take two quarts of mild ale; put into it live coals and embers (of wood) till the beer is blood warm; scum off the coals that swim; and give him the beer and ashes, and drive him about. You may depend on it, that will make him break wind in a short time, which will immediately relieve him.

I have had eight or ten oxen blown at a time, but never knew this to fail in my life, if given while the bullock can stand;

stand; but if he drops, the only way then is to stab him, which I suppose you know the method of doing.

As I imagine, by this time, your patience is worn out by the length of this letter, I must beg leave to subscribe myself, with great respect,

Your most humble servant, &c.

N U M B E R X X X I I .

Mr. Rocque's Answer to the above Letter, containing the Price of Burnet and Lucern Seed, and a Method of preventing Lucern from blowing, or hoving Cattle.

S I R,

IN answer to your letter, which was conveyed to me by Mr. Newbery, it is with pleasure I inform you that either your *strong land*, or your *fleech*, will produce both lucern and burnet, provided the land be clean and not flooded.

For the manner of cultivating the land, and of sowing it, I recommend you to the *Museum Rusticum*, where I have been very particular on that head*.

In your letter you propose sowing with your lucern two bushels of oats to an acre; but that is too much; a bushel and a half will be sufficient.

For the nature of the burnet, and the method of raising it, see the *Museum Rusticum*, Number CVI. Volume the First, Page 460.

The quantity to be sown is twelve pounds to an acre, and the price I sell it for is two shillings the pound; but the lucern seed we sell at one shilling.

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* For Mr. Rocque's method of cultivating, see pages 295, 296, 306, 308 and 460 of our First Volume; and for his method of cultivating lucern, see the same pages, and also page 339 of the same volume, where this subject is treated of at large. N.

The first cut of the burnet will cure horses of the grease, and there is no danger of its blowing, or hoving the cattle; but the lucern will, unless it be cut the day before it is given to them.

I am, SIR,

Your most obedient servant,

B. ROCQUE.

Walham-Green, near Fulham, Middlesex,

March 17, 1764.

NUMBER XXXIII.

A Letter to the Editors, containing a Method of curing Wheat damaged in the Field by Rain in Harvest.

GENTLEMEN,

A WET harvest is what a farmer dreads more than almost any thing, as it hurts the quality of his corn, encreases his expences, and greatly lessens his profits.

So much depends on the well getting-in of our bread-corn, that every man, who knows any thing that can forward so good a purpose, is, I think, in duty bound to communicate it for the benefit of the public.

It is a well-known maxim that wheat should be left for some days in the field, after it is cut, before it is inned: this, the farmers think, and not without reason, improves its quality; the dews plump the kernels, and the sun brings it to a proper and perfect state of maturity.

These then are the benefits that result from leaving the sheaves for some time abroad; but it is necessary the weather should be fine, or great losses are often the consequence of this practice.

Sometimes, when the farmer least expects it, the weather sets in foul, and it rains for several weeks successively: it is then very difficult to preserve the wheat from being greatly damaged, notwithstanding the many contrivances that have been thought of for this purpose.

Some

Some shock their sheaves, setting them up in traves of six sheaves of a side, and two to cap them; but this is a very dangerous method, and never to be practised after much rain has fallen: if the sheaves were dry when the traves were set up, from an expectation of its raining, it is of great service; but if the sheaves are first suffered to be wet, ten to one but the corn sweats, sprouts, and rots, by being so close confined from the action of the air.

After all, I am apt to think that it is full as well not to cap the shocks; for if the rain is not very heavy and constant indeed, the ears, provided they do not touch the ground, will dry nearly as fast as they are wetted.

In Middlesex, Kent, and some parts of Essex, they generally bind their wheat as they reap; but then it must be supposed that their crops are, for the most part, pretty clear from green weeds, which would otherwise cause the sheaves to sweat violently in the mow, and greatly damage the corn.

When a farmer is so unfortunate as to have his wheat-sheaves thoroughly wetted, if fine weather ensues, I would by all means advise him to unbind them, and afterwards spread them out to be dried by the sun. This simple method will often prevent great losses, and the wheat may at last be got in in tolerable good order.

If the rain, however, should continue long, and there should be danger of the kernels growing, which by observation he may easily judge of, I would advise the thinking farmer instantly to carry it home wet as it is, and afterwards manage it as I shall direct from my own frequent experience.

When the waggon, or cart, comes home loaded with sheaves, let them be thrown promiscuously into the bay of the barn, and not regularly mowed; for it is necessary they should lie hollow, that the air may get into the vacuities, and prevent the sheaves from heating during the little time they are to continue in the situation above described.

Let our farmer next prepare some cutting-boxes, such as horse-meat is cut in, in Kent, and some other counties,

and which I have seen described in your collection. The number of these boxes should be according to the quantity of wheat he has wet; but three or four constantly kept going will do a great deal of work.

With these cutters let the ears be cut off from the wet sheaves; and when a sufficient quantity are collected from all the boxes, let them be put loosely up in sacks, and carried to a malt-kiln, there to be regularly and gradually dried; and when the first parcel is done, another is to succeed, and so on till the whole work is completed.

This method I can, from my own experience, recommend to your readers; and it is less expence than would at first thought be imagined. The heat of the kiln may be kept up higher than when malt is drying, as the chaff of the ear will prevent the kernel of the wheat from being damaged by the fire, unless the heat is very intense indeed; but it will, however, be proper to keep the ears gently stirring with a fork, or rake, during the time they are drying.

In this management the farmer will find great advantages; and his wheat will, with a very inconsiderable additional expence, be nearly, and sometimes quite, as good in a wet harvest, as if it was housed in ever so good order, in fine sun-shining weather.

If, by chance, after you have cut off the ears from the sheaves, the weather should change, and become fine, you may often dry them without the assistance of the kiln, by spreading them thin on a large threshing-cloth, and turning them frequently with a wooden rake; and even, if by this method you should not entirely dry them, it will still bring them so forward that the kiln will easily complete the cure.

I must, however, before I conclude, caution the farmer not to suffer the kiln to be much heated, unless the ears are kept constantly stirring during the time they are drying.

You may probably hear from me again, if I see this inserted. I am,

GENTLEMEN,

Essex,

Your most obedient servant,

April 6, 1764.

AN OLD FARMER.

N U M-

NUMBER XXXIV.

*A Letter to the Editors, recommending a Method of preparing
Peas for Hog-Meat.*

GENTLEMEN,

A Few years ago I had a plentiful crop of peas on a ten-acre piece, which lies near my house: when they were full podded and nearly ripe, I had them hooked in the usual manner; but before I could get them in, there came a heavy shower of rain, which wetted them through and through; and the dull heavy weather, with frequent showers, which followed, prevented their drying for a considerable time.

I caused the wads to be from time to time turned, to prevent the haulm from rotting; and at length, a few days sun-shine dried them enough to be inned; for as they lay hollow, the wind was greatly assistant to the operation.

Before I got them in, on examining some of the pods, I found that the peas were all sprouted to a considerable length: this was what I had expected, as I gave my crop over for lost, till after a little recollection, as the weather still continued fine, I determined to thresh them in the field.

This was accordingly done; and the corn, after it was cast and riddled to separate it from the rubbish, was dried on my malt-kiln.

When this operation was over, I began to reflect in what manner I should dispose of my peas, being sensible that they could not be proper for seed, and standing no chance of disposing of them to any advantage in the market.

At length, as it was then a time of war, and of course there was a great demand for pork for the use of the navy, I determined to buy in a considerable number of lean hogs, that I might by their means consume this crop on my own premises, and in that manner make the most of it.

My

My expectations were more than answered, for I found, by repeated experience, that three bushels of the peas I have mentioned went nearly as far in fattening the hogs I bought, as four bushels got in dry and hard in the manner usually practised.

This discovery I made several years ago, and it has turned out to my advantage; for, since that time, I have been quite indifferent as to the weather in which my peas are hooked, being rather better pleased, as far as relates to them, with wet, than dry weather: but if the weather happens to be dry at the time they are ripe, I always cause as many as I want for feeding my hogs, which are not a few in a year, to be regularly malted in the same manner, nearly, as my barley: this management has, of late, succeeded very well with me, and I therefore intend to continue it.

Besides feeding my hogs with these malted peas, I have besides often given them to my horses, with which they agree very well, and are heartening food.

Turkeys will fatten apace on them also, and be fine meat.

I have applied my malted peas to many other uses, which I have not, at present, time to enumerate: but were they only used for feeding hogs and horses, it is still worth while to prepare some in this manner every year.

I should be glad to see inserted in your collection some good and efficacious remedies, for the cure of the several diseases incident to cattle: some of your correspondents have prescribed for the rot in sheep; but I do not recollect, that they have touched upon any other disorder, even in that useful animal.

I hope this hint will be productive of some good letters on this interesting subject.

I am, GENTLEMEN,

Rodings, Essex,

Your humble servant,

April 2, 1764.

A. K.

N U M-

NUMBER XXXV.

A Letter to the Editors, respecting the Drying of Hops.

GENTLEMEN,

I Am surprised to see so little said in your work on the subject of planting hops, and the management of them before and after they are gathered: it is a subject certainly worth enquiring into, and some of your experienced correspondents would greatly merit the thanks of the public were they to send you their thoughts and practices in this matter.

I shall myself, for the present, make a few general observations on this head, which may probably be of service, if attended to as hints of improvement.

In drying hops, the constant custom is to depend entirely on the skill of the workman, with respect to the degree of heat that it is necessary to keep up in the kiln: and this skill often fails him; for many of them are apt to think they know more than they really do; and, in fact, as this knowledge is only to be acquired by experience, it is a long time before any of them attain it.

Would it not then be much better to regulate the degree of heat by means of a thermometer placed in some proper position? This would be an unerring rule to go by; and the hop-growers would, by this means, be delivered from the effects of the impositions and malice of many of these men, who pretend to possess a particular secret of drying hops, which they affect to keep to themselves; and it is not unfrequently that they purposely spoil a parcel of hops, that may chance to belong to a man they like not; and this they may easily do, and impute it to accident.

It has been long a dispute, whether it is best to cover the kiln, on which hops are dried, with hair-cloth, or with double plates of tin; in which latter case any fuel may be used, which is a matter of great consequence, making a material difference in the expence.

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But my opinion in this matter is, that neither method is in itself perfect: by drying on hair-cloths it takes up much more time, and more fuel of a costly kind; on the contrary, by drying on the double tin plates above mentioned, the hops, without the greatest care, will be burnt, or scorched, to the great prejudice of the owner: I would, therefore, recommend a method which I have myself tried with success, though not in any very large quantities: I suppose, however, it would answer to the full as well, if not better, when considerable quantities are to be dried and bagged.

My method then is, to cover the bottom or floor, where the hops are to lie, with good tin plates, soldered and riveted together: over this tin floor I lay a double hair-cloth strained pretty tight; and on this I lay the hops, which in this method dry gradually, and retain their fine colour and smell; qualities which add much to their value in a market.

When one side of the bed of hops is sufficiently dried, I slacken the fire in the furnace, that the great heat may go off before they are turned: this is necessary, as they would otherwise break and shatter in the operation.

I do not love in general to lay them above four inches thick on the cloth; but if I am hurried, I lay them six or eight inches thick, with this caution however, that the thicker the layer or bed is, the more slow and gradual at first should be the heat to dry them.

It is not easy to describe when the bed will be fit for turning: it may, however, easily be known on inspection; and some say, that when they are so light as to jump, when the bed is beat gently with a stick, they should be turned: one thing, however, is to be observed, that after they are turned, a very few hours complete the drying; a third or a fourth part of the time they were on the kiln before turning will do. I am interrupted, and must therefore, for this time, conclude.

Your humble servant,

March 27, 1764.

A MINOR HOP-PLANTER.

NUMBER XXXVI.

To the Editors of the MUSEUM RUSTICUM.

GENTLEMEN,

AS our daily papers are continually full of complaints of the high price of coals, which falls very hard on the laborious poor, I have taken the pains to transcribe for you a paper out of the Philosophical Transactions *, and can assure you that I have myself seen the fuel there mentioned burnt in the several fires used in the Royal Society's house at Crane-Court, where they had laid in some store that year; and also at the right honourable Arthur Onslow's, then speaker of the honourable house of commons, in Leicester-Street, near Leicester-Fields; and in both places it burnt to the great comfort and satisfaction of all those persons present at the experiment.

At Aix la Chapelle, they give it so much the preference to coal alone, that, though the town is surrounded with collieries, they burn in all their best rooms no other fuel.

I am, GENTLEMEN,

London,

Your humble servant,

April 10, 1764.

Y. Z.

An Account of Coal Balls made at Liege.

IN pursuance of the orders of the society, I shall endeavour to give an account of factitious coal made at Liege. But first I shall quote two authors, who mention it in their accounts of the town of Liege.

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* Though we do not make a practice of inserting in our collection what has already appeared in print, yet we willingly give place to the above account; not only because it is evidently useful, and proper to be more known than it can be by means of the Transactions of the Royal Society, which bear a high price; but also to oblige a gentleman who has greatly contributed to enrich our work. E.

The first is, *Le Curieux Antiquaire, ou Recueil Geographique et Historique*, par le Sieur P. L. Berkenmeyer à Leide 1729, p. 182. Where he says, “ This bishopric
 “ (Liege) has rich mines of *houille*, or *stone coal* *, which
 “ the inhabitants sell in the *Netherlands*, and by the sale of
 “ it get above 100,000 ducats *per annum*.

“ This coal lights easily, and gives a great heat: it is
 “ not therefore to be wondered, that fire is reckoned
 “ amongst other advantages the *Liegeois* boast of: they say,
 “ they have the best bread, the hardest iron, and the hottest
 “ fire: by this last they mean *de la houille*, which being
 “ once well lighted casts the greater heat if it be wetted
 “ with water.”

The second book I shall mention is, *Les Delices des Pais Bas*, vol. III. p. 243, where I find that this town, *Liege*, is said to be “ the hell of women, because they are obliged
 “ to work more here than in any other country. They
 “ draw the boats, and carry on their backs, like slaves,
 “ *les houilles*, and other things; and these women are called
 “ *des Botrefies*.”

In the year 1628, by a printed paper produced before you, it appears, that this fuel was known in England at that time; and, if you will believe the author of that paper, it was discovered by Hugh Plat in 1594.

There is an account of it printed in the essays for the month of December, 1716; where it is proposed to be made with the black ouse of the Thames, and for four-pence per bushel.

I have used this coal and clay mixed upwards of ten years, and by experience I find it to answer very well. It is a most excellent fire for roasting, for heating of irons, or warming a room: I use it in my kitchen, laundry, parlour, and library.

The

* The common people call their pit-coal *del Hoy*, or *de la Houille*; and the mixture of coal and clay, *de Houchy*.

The method in which it is made at *Liege*, where I first saw it, and made some myself, is as follows:

Take one third of unctuous clay (such as brewers use to bung their vessels: in it there must be neither sand, gravel, or stone) and two thirds of coal-dust; mix and make them incorporate well together; cast them into round balls or bricks; and you may put them on a coal fire, and they will burn directly: but if they are made in summer time, and laid to dry for use in winter, they will light sooner.

Thus you have an hot, clean, lasting fire, not at all offensive to the smell.

The dust is there the refuse of the mine, and may be here of the coal-merchant's yard; so that this fuel comes exceeding cheap.

Nor is it necessary to put so much coal-dust, for some clay (particularly what I use myself in the country) will do if mixed two thirds clay and one third coal-dust; and the true proportion of the mixture must be found by experience: but it is always better to put in too much than too little coal-dust at first, because men are too apt to be discouraged in making experiments.

This fuel is not only to be had at an easier price, but is likewise more durable.

How far it may be useful in glass-houses, brew-houses, salt-works, &c. I must leave to the consideration of the several persons concerned in them.

I have heard, that at *Liege* they burn both lime and brick with it; but as I never saw it done, I cannot affirm it.

Copied from the Philosophical Transactions, Number 460, for the months April, May, June, and July, 1741.

N U M B E R XXXVII.

A Letter to Mr. Robert Davis, on the best Method of fattening Pigs.

S I R,

A Letter in the *Museum Rusticum* *, relative to some pigs being put up to fatten, induces me to convey a piece of intelligence relative to the feed of these creatures, that ought to be more publicly known than it is at present.

Put two *chotes* † of the same litter and weight in different sties for fattening; give each the same quantity of peas, meal, or whatever food it be; make no difference but in the quantity of water given. Suppose, for instance, *dame's* pig has a gallon a day, and mine but two quarts, or in proportion to a larger quantity: *dame's* pig will be considerably the fattest and heaviest, but mine will be the best and firmest meat ‡. Great quantities of liquids extend the vessels of both man and beast; and a due, but not over, proportion of water is a necessary consideration for those who would have good bacon or pork.

It is a vulgar saying, that hogs delight in dirt: they do so; but the hog that is kept clean, and feeds cleanest, is the wholesomest and best meat.

I am, S I R, yours.

* For the letter mentioned by our correspondent, see Number II. page 11, of this volume.

† A common word in Essex, &c. meaning store pigs that are in tolerable proof, and fit to put up to barley meal or peas.

‡ We are greatly obliged to the gentleman who sent this hint, as many country dames have formed an opinion, that the less water a pig has that is put up to fatten, the sooner it is fit for the knife. R.

NUMBER XXXVIII.

A Letter to Mr. Robert Davis, on the Tea Plant in Carolina.

S I R,

THE account published in the *Museum Rusticum*, of the tea shrub thriving in *South Carolina*, I have not the least doubt of: the latitude is the same with that in which it grows in India; the difference of north to south. But I have still stronger reason to believe it does actually grow spontaneously in that part of America: I was one of the fools that went over to *Georgia*, and while I was there, I frequently made tea of a leaf gathered from a shrub, which the Indians called *Coffena**, and which they often smoked when they had no tobacco: and, I am told, this shrub exactly resembles the tea shrub in India. The method I used with it, was to dry it hastily in an iron pot, and then put boiling water to it, as is usual in making tea; and the flavour was very agreeable; the colour almost as brown as coffee; but that, I apprehend, arose from the hasty method of drying it, for the leaves were rather parched than dried. I have often smoked a pipe of coffena with their majesties, *Toma Chaci* and *Senoaki*, his queen, at their mud palace, about three miles from *Savanake*; and his majesty was pleased to express great satisfaction therewith, when he had not a penny to buy tobacco, which was often the case.

I am, SIR,

Felixtow Cottage,

April 8, 1764.

Yours, &c.

* We imagine this is the *South-Sea tea*, which is thought to be the same plant as the *Paraguay tea*; but whether it is the same as the tea brought from China, is yet undetermined: that it bears a strong resemblance to it, in flavour and appearance, is however certain. E.

NUMBER XXXIX.

A Letter to the Editors, on the Uses of Furze or Goss as Food for Cattle.

GENTLEMEN,

ABOUT four years ago I bought a parcel of as poor land as can be imagined: it was part of an old park. The whole of the park consists of some hundred acres, and was about forty years ago purchased by a farmer in good circumstances, who divided it into five different parcels, and built as many brick houses, barns, and other conveniences, and let them separate, and raised mostly goss or furze hedges.

The soil consists of black and white poor hungry sand; some tolerable sand, and some of what we call hazel mould, and some little clay; heath growing where wet, and broom where dry; and a pretty many acres of it boggy.

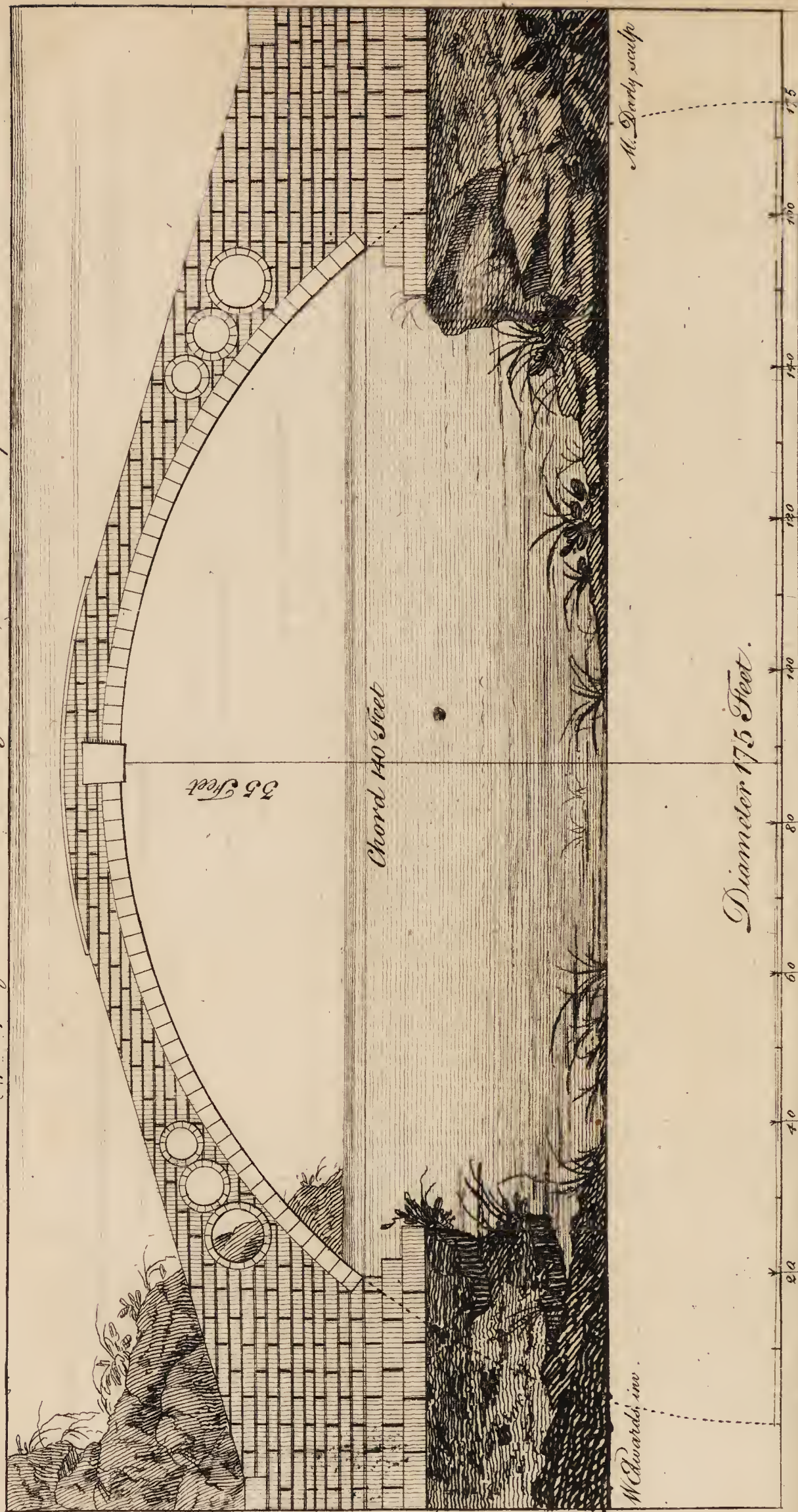
About half this land was plowed by the different tenants; and where the heath and very coarse grass grew, it was den-shired; and they got good crops of corn for about three years; but for want of amendment, and the mould being very shallow, it soon wore out; and most of the other land, for want of manure, soon shared the same fate: and on the greatest part being laid down, heath came where wet, broom and goss where dry: and the goss is now, for ten and twenty acres together, almost as thick and as even as if sown, owing to the goss-seed being first blown from the hedges.

In this condition the tenants did but indifferently, not knowing how to vend, or consume, such a large quantity of goss, which grows here most surprisingly fast, and every three years may be cut about five feet long.

I bought part of it for the reasons others disliked it, *viz.* the goss; erected a large brick-kiln, and have consumed yearly a good deal of the goss, and am now going to erect a kiln to burn rock-stone into lime, having found great benefit



Point of entry Prydd or New Bridge, over the River Tuf.



nefit from liming fome of this poor land ; but as with both thefe kilns I fhall not be able to have the gofs cut every three years as it ought to be, and as I keep feveral horfes, I hope foon to fee, in the *Museum Rusticum*, an account of fome cheap method of properly bruifing it for horfes*.

I obferved laft winter in the froft, that bullocks would eat young twigs of the gofs, at leaft fourteen inches long ; and I had feveral in April and May, in this rough land, that were lufky, without eating a handful, all the winter, of any kind of fodder.

I have cleared, plowed, and mended, feveral acres, where the gofs grew in fpofts, and may, perhaps, hereafter give fome farther account †.

I am, GENTLEMEN,

Your moft humble fervant,

March 21, 1764.

A KENTISH MAN.

NUMBER XL.

A Letter to the Editors, describing a curious Bridge in Wales, of one Arch.

GENTLEMEN,

THE bridge thrown over the river *Taaf*, at *Lantriffent*, near *Landaff*, in the county of *Glamorgan*, is one of the moft extraordinary performances in architecture, that, perhaps, has ever appeared ; and the more fo as it is the work of one William Edwards, an illiterate Welchman, well *infpired*, as you may fuppofe, with a mechanical genius : it is thrown from one hill to another : its dimensions as ap-

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pear

* We are well pleafed at having an opportunity of informing our correspondent and the public, that we fhall, very fpeedily, give descriptions of two machines for cutting and bruifing furze, as now actually praftifed in Wales, with engravings illustrating the fame, a gentleman having promifed them to our work. E.

† We fhall be glad to hear from this gentleman as often as he thinks proper to favour us with his letters. E.

pear in the plan inclosed: the cost 700*l.* only: he built it twice, because, at first, the buttments gave way: you will see by the plan how he prevented that for the future, by the circular arch he made.

But what you will be more surpris'd at still, is the breadth of it, which is no more than eight feet, as in that country, distant from the capital, the number of carriages are not so many.

It is astonishing to see how such a bridge of stone, of so narrow a breadth, could be thrown from one mountain to another: the diameter of the circle is one hundred and seventy-five feet: the chord of the arch is one hundred and forty feet: the altitude from the chord to the arch is thirty-five feet*.

This is a matter worthy the consideration of architects, and not improper for your work, (which has the additional title of *Commerciale*) because it makes a communication between two parts of South Wales.

If it is acceptable to you, you have the liberty to print it †.

I am,

GENTLEMEN,

Monmouthshire,
March 16, 1764.

Your humble servant,

Y. Z.

* This bridge is called in Welsh *Pont y ddy Prydd*, and is undoubtedly well worthy the attention of the curious traveller.

† We are greatly obliged to the gentleman who has kindly favoured us with this account, and think it always a happiness when we have it in our power to bring to light concealed merit, which, but for our work, would often remain in a state of obscurity, unknown, unpraised, and unrewarded. A. E. R.

NUMBER XLI.

Translation of a Letter from the Avoyer, or chief Magistrate, at Berne, in Switzerland, to ———, relative to the Magazines for Corn and Wine there.*

SIR,

YOU ask me for an account of the provisions both for corn and wine, which are subsisting in the canton of Berne, and if it is true that we owe the establishment of them to the patriotic zeal of a citizen of this republic, who, dying without children, left his riches for that purpose: in regard to which, I have the honour to acquaint you, that you have been misinformed as to the nature of the foundation of our magazines; and give me leave to add, by the way, that it is not in this little republic, as in great states. At Berne, private men have very slender fortunes: on the contrary, the state, by a course of disinterestedness and prudent œconomy in those who govern, may pass for rich, since the rights of the royalties only, with the rents of the estates, or lordships, of which they are possessed, both by purchase and conquest, put it in their power, and even without raising any sort of tax or excise on the people, to lay up almost every year some saving in the treasury: from thence it arises that the government is always both willing and able to relieve the wants of its citizens and subjects, and therefore such foundations would, in this country, be works of supererogation.

The magistrates of Berne ever flatter themselves, that it is more honourable for them to administer the revenues of the republic in such a manner, that none but itself should be in a capacity to relieve the people, than it would be, if by augmenting the salaries of their officers, which they are well able to do, they should become, after the example of

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* See Number XIX. Page 63 of this Volume.

many great states, rich citizens in a poor republic. But it is time to finish this long digression, and to apply myself to satisfy, Sir, your curiosity: I will begin by laying before you the nature of the magazines for corn.

The people of Berne have two sorts, one subject to great variations, the other always the same. There are of the first sort many in the capital, and in many other parts of the canton, which are filled, more or less, according as the abundance of the harvest, and goodness of the grain, furnish an opportunity; for, besides the fixed revenue which the state hath in fee-farm rents, it hath a great quantity of tithes, which are of a very casual, and very different produce: when there are several fruitful years in succession, the granaries of this sort in the capital become full; but in other parts, if there is an appearance, towards Easter, of a good harvest, the corn is sold, which is in the castles of the different bailiwicks, after having paid the several salaries to which they are made liable; and the bailiffs, who have a certain revenue made good to them, account for the surplus to the chamber of œconomy at Berne. The magazines of this capital, on the contrary, are never opened and sold but in dear times; and then care is taken not to sell to any family more than is sufficient for its supply, and always below the market price.

As to the magazines of the second sort, they are called the *provision*, and were established in pursuance of a convention, called the *dissentional*, which the whole Helvetic body hath entered into for the common defence of Switzerland, in case of an attack from a foreign enemy. This treaty, regulating the number of troops and artillery which each canton is bound to furnish, obliges them at the same time, to have always ready, and in store, provision and ammunition in proportion to their contingent. There are of these magazines of provision, as well at Berne as in all the castles where the bailiffs reside: they are never either diminished or encreased, only care is taken to keep them always in good order, and to substitute good corn in the place of that which decays. A bailiff, who should misap-
ply

ply this provision, would be deposed; and from time to time the deputies of Berne, without giving notice of their intention, visit these magazines, and cause the corn to be measured over. Although there is six times more corn in these magazines than the contingent, which Berne furnishes by the dissentional, requires, they have never taken, in times of peace, more than one fourth part in an exceeding scarcity; and they have had great care to refill them without delay.

This is, Sir, in abridgement, an account of the magazines for the provision of corn in the canton of Berne. Several short crops within fifteen years having caused the common people to suffer by the high price which they were obliged to give for their bread, and the corn which the government caused to be purchased in Burgundy and Suabia, and resold to a great loss, having given but little relief to the misery of the poor, there is at present a project under consideration at Berne, which, if it is brought to pass, will, in all probability, prevent the subjects of this state from paying very dear for their bread for the time to come; which is this: It is proposed to build, in those parts of the canton which are most fruitful in corn, large granaries, and at such times when the abundance of the harvest shall have caused the value of a certain measure of corn to fall below a certain price, to buy up, on account of the government, all that shall be left for sale in the markets, after private persons have done buying, to the end that the owner, or farmer, may be always sure of having a certain price for his corn, and not be under a necessity of being at the expence and trouble of laying up what he may have left in the town-hall, or carrying it home again, or else selling it at too low a price to foreigners in the neighbourhood, of whom the subjects of Berne are often afterwards obliged to buy it again at an exorbitant rate. The government, on the contrary, will sell their corn again to their subjects, as soon as ever the price shall have risen to a certain degree; and by this management they will prevent both the too high, and too low price of this commodity, both of which

which are inconveniences, in their consequences hurtful enough to deserve the care of a sovereign to prevent, who hath nothing more at heart than to procure, as much as can depend on his care and foresight, the happiness of the people which Providence hath submitted to his government.

As to wine, the state of Berne having a great quantity of wine, as tithes and quit-rents, in the several vineyards in the canton, had formerly a great deal in store, both at Berne and elsewhere, of which they made use, in short years, both to pay the salaries in wine, which are annexed to a number of employments, and to supply the poor citizens therewith at a moderate price, observing the same precaution as when they sell corn at a low price; but the salaries in wine have by little and little encreased to such a degree, that at this day there is so little left to be laid up, that after two succeeding short years, the state finds itself under a necessity of paying a great part of the salaries in money, which were appointed to be paid in wine, in order to keep it in their power to supply the tradesmen and other poor citizens of Berne therewith at a low rate.

I hope, Sir, that I have been so successful as to satisfy your curiosity, and have the honour to be,

S I R,

Your humble servant.

N U M B E R XLII.

To the Editors of the MUSEUM RUSTICUM.

GENTLEMEN,

IN your last monthly collection you obliged your readers with two engraved plates of the price of wheat and malt, at Windsor market, for one hundred years. I happen to have by me an account from the same place, from
the

the year 1551, to the year 1763, which includes the hundred years already published, and which, by comparing, I find to be right.

I have therefore transcribed the account, (leaving out those hundred years already published) and sent it you inclosed as an addition to what you have printed before.

I am, GENTLEMEN,

Your humble servant,

April 16, 1764.

Y. Z.

Extracts from the Ledger Books of Eton College, relative to the Prices of Wheat and Malt at Windsor Market.

1551, It appears, by a memorandum, that this year began the custom of receiving wheat or malt, instead of money, for part of the rent, wheat at 8 s. the quarter, malt at 5 s. ditto.

For instance, The old rent of Compton, in £. s. d. money, was

	£.	s.	d.	
	16	4	0	
	£.	s.	d.	
It was altered to rent in money	8	4	0	} 16 4 0
To rent in wheat, 20 qrs. at 8 s. per qr.	8	0	0	
Old rent of Thurlby, in money	18	8	0	
It was altered to rent in money	13	8	0	} 18 8 0
To rent in malt, 20 qrs. at 5 s. per qr.	5	0	0	

And this price continued of 8 s. per quarter for wheat, and 5 s. per quarter for malt, to the year 1591, notwithstanding the corn-act, 1575.

The quantities of wheat and malt were calculated so nearly to the uses of the college, that seldom any was bought, or any overplus to be sold; so that the market price is rarely to be met with.

1567, Wheat bought at 18 s. the quarter. Malt, at 13 s. ditto. Old rye, 20 s. ditto. Oats, 7 s. ditto. Beans, 1 l. 4 s. ditto.

Wheat, threshing per quarter 14 d. Barley, 7 d. ditto. Oxen, 2 l. 13 s. 4 d. a-piece. Calves, 8 s. 4 d. Sheep, 2 s. to 7 s. Bear, 1 l. 7 s. 4 d. Hops, 1 l. 9 s. 4 d. per C wt.

1594, Malt,

1594, Malt sold at 16 s. 6 d. *per* quarter (Wheat, by Bishop Fleetwood, 56 s. the quarter).

1595, Malt sold at 20 s. *per* qr. Wheat, 40 s. ditto.

1596, Ditto, at 1 l. 6 s. 8 d. ditto. Wheat, 48 s. ditto.

1597, Wheat sold, Lady-Day, at 3 l. 11 s. the quarter.

Malt, at 2 l. 10 s. 4 d. Michaelmas, Wheat, 3 l. 8 s. Malt, at 2 l. 2 s. 4 d.

Oxen, from 4 l. 0 s. to 6 l. 10 s.

Sheep, from 6 s. to 10 s. 6 d. *

	Wheat sold for <i>per</i> Quarter.			Malt sold for <i>per</i> Quarter.		
	£.	s.	d.	£.	s.	d.
1598, Lady-Day,	3	8	0	1	14	4
Michaelmas,	2	5	4	1	10	8
1599, Lady-Day,	2	5	4	1	4	4
Michaelmas,	1	13	0	1	2	4
1600, Lady-Day,	1	12	8	0	16	0
Michaelmas,	2	2	8	1	4	0
1601, Lady-Day,	1	18	0	1	4	0
Michaelmas,	1	11	8	1	5	0
1602, Lady-Day,	1	6	8	0	18	8
Michaelmas,	1	12	0	0	16	0

N. B. The bushel is of nine gallons at Windsor, and most of the neighbouring towns; has been so here, perhaps, from the foundation of the college. There are sixty loaves of college-bread made out of a bushel of wheat; each loaf to weigh sixteen ounces into the oven; twelve ounces weight, baked; and which is the daily allowance to every one in the college.

1603,

* Great use may be made of such registers as the above, by marking the variation of the prices of different articles at sundry periods. For instance, in the year 1567 it appears that oxen were 2 l. 13 s. 4 d. a-piece; and sheep from 2 s. to 7 s. whereas, thirty years afterwards, in the year 1597, oxen were from 4 l. to 6 l. 10 s. a head; and sheep from 6 s. to 10 s. 6 d. This was a great rise, yet by a diligent search into the history of that period, it may be accounted for. E.

		Wheat sold for per Quarter.			Malt sold for per Quarter.		
		£.	s.	d.	£.	s.	d.
1603,	Lady-Day,	1	17	4	0	14	8
	Michaelmas,	1	13	4	0	14	8
1604,	Lady-Day,	1	10	0	0	13	8
	Michaelmas,	1	11	4	0	15	4
1605,	Lady-Day,	1	17	4	1	1	4
	Michaelmas,	1	14	4	1	2	8
1606,	Lady-Day,	1	10	0	1	0	0
	Michaelmas,	1	16	0	0	18	8
1607,	Lady-Day,	2	0	0	0	18	0
	Michaelmas,	1	13	4	0	18	8
1608,	Lady-Day,	2	5	4	1	0	0
	Michaelmas,	3	8	0	1	8	0
1609,	Lady-Day,	2	16	0	1	8	8
	Michaelmas,	2	4	0	1	9	4
1610,	Lady-Day,	1	19	0	1	0	0
	Michaelmas,	1	12	8	0	18	8
1611,	Lady-Day,	1	15	4	0	17	4
	Michaelmas,	2	2	0	1	2	0
1612,	Lady-Day,	2	0	0	1	5	4
	Michaelmas,	2	4	8	1	5	4
1613,	Lady-Day,	2	8	0	1	6	8
	Michaelmas,	2	9	4	1	6	0
1614,	Lady-Day,	2	6	1	1	6	0
	Michaelmas,	1	17	4	1	8	0
1615,	Lady-Day,	1	17	4	1	4	0
	Michaelmas,	2	0	0	1	6	8
1616,	Lady-Day,	2	1	4	1	8	0
	Michaelmas,	1	19	4	1	1	4
1617,	Lady-Day,	2	8	8	1	0	8
	Michaelmas,	2	8	8	1	0	0
1618,	Lady-Day,	2	9	4	1	0	0
	Michaelmas,	2	4	0	1	0	0
1619,	Lady-Day,	1	16	0	0	19	4
	Michaelmas,	1	14	8	1	0	0
1620,	Lady-Day,	1	9	4	0	18	8
	Michaelmas,	1	11	4	0	18	8

		Wheat fold for per Quarter.			Malt fold for per Quarter.		
		£.	s.	d.	£.	s.	d.
1621,	Lady-Day,	1	6	0	0	16	0
	Michaelmas,	1	14	8	0	16	0
1622,	Lady-Day,	2	8	0	1	4	0
	Michaelmas,	3	9	4	1	8	0
1623,	Lady-Day,	3	0	0	1	11	8
	Michaelmas,	2	4	0	1	10	8
1624,	Lady-Day,	2	5	4	1	4	0
	Michaelmas,	2	10	8	1	2	8
1625,	Lady-Day,	2	13	4	1	1	0
	Michaelmas,	2	10	8	1	2	0
1626,	Lady-Day,	2	13	4	1	8	8
	Michaelmas,	2	5	4	1	6	8
1627,	Lady-Day,	1	18	0	1	0	0
	Michaelmas,	1	14	0	1	0	0
1628,	Lady-Day,	1	6	8	0	18	0
	Michaelmas,	1	9	4	0	18	0
1629,	Lady-Day,	1	18	8	1	0	0
	Michaelmas,	2	5	4	1	8	0
1630,	Lady-Day,	2	5	4	1	9	4
	Michaelmas,	3	6	0	1	18	8
1631,	Lady-Day,	4	0	0	2	4	0
	Michaelmas,	2	16	0	1	13	4
1632,	Lady-Day,	2	8	0	1	15	4
	Michaelmas,	2	18	8	1	6	8
1633,	Lady-Day,	2	16	0	1	4	8
	Michaelmas,	3	0	0	1	11	4
1634,	Lady-Day,	2	16	0	1	12	8
	Michaelmas,	2	16	0	1	12	0
1635,	Lady-Day,	2	12	0	1	7	4
	Michaelmas,	3	0	0	1	8	0
1636,	Lady-Day,	2	13	4	1	8	0
	Michaelmas,	3	0	0	1	9	4
1637,	Lady-Day,	2	10	0	1	10	8
	Michaelmas,	2	16	0	2	8	0
1638,	Lady-Day,	3	6	8	2	10	0
	Michaelmas,	2	8	0	1	14	8

1639, Lady-

	Wheat sold for per Quarter.			Malt sold for per Quarter.		
	£.	s.	d.	£.	s.	d.
1639, Lady-Day,	2	5	8	1	14	1
Michaelmas,	2	4	0	1	9	4
1640, Lady-Day,	1	17	4	1	6	0
Michaelmas,	2	12	0	1	9	4
1641, Lady-Day,	2	12	0	1	10	0
Michaelmas,	2	4	0	1	8	0

Note, From September 17, 1641, to September 18, 1646, no accounts remain of receipts, or expences, during that time.*

1649. *Note, This year, from raising the stipends and dues in money, to provost and fellows, neither wheat nor malt were sufficient. No wheat nor malt sold this year, so that probably the corn-rents then first began to be paid in money.*

A continuation of the true market-price of wheat and malt in Windsor market, from 1745 to 1758, taken from the audit-books in Eton college; and of wheat, to the year 1763.

	Wheat per bushel.		Malt per bushel.	
	s.	d.	s.	d.
1746, Lady-Day,	5	3	2	10
Michaelmas,	4	6	2	9
1747, Lady-Day,	4	7½	2	10
Michaelmas,	4	1	2	10
1748, Lady-Day,	4	6	2	10
Michaelmas,	4	9	3	0
1749, Lady-Day,	4	6	3	2
Michaelmas,	4	9	3	2
1750, Lady-Day,	3	10½	3	2
Michaelmas,	4	3	3	2
1751, Lady-Day,	4	1½	3	2
Michaelmas,	5	6	3	4
1752, Lady-Day,	5	2½	3	6
Michaelmas,	5	3	3	4

1753, Lady-

* The years from 1646 to 1746 are published in the last monthly paper.

		Wheat per bushel.		Malt per bushel.	
		s.	d.	s.	d.
1753,	Lady-Day,	5	8	3	4
	Michaelmas,	5	6	3	6
1754,	Lady-Day,	4	8	3	6
	Michaelmas,	4	0	3	6
1755,	Lady-Day,	3	11 $\frac{1}{2}$	3	2
	Michaelmas,	4	6	3	2
1756,	Lady-Day,	4	6 $\frac{3}{4}$	3	2
	Michaelmas,	6	9	3	4
1757,	Lady-Day,	8	6	4	6
	Michaelmas,	6	6	4	6
Common value for the last two years,		2	12 6 6 6 $\frac{3}{4}$	1 11 0 per qr. 3 10 $\frac{1}{2}$ per bushel	
1758,	Lady-Day,	}	5 2 $\frac{1}{4}$	} N. B. The Rates for these last five Years are the mean Prices for each Year.	
	Michaelmas,				
1759,	Lady-Day,	}	4 11 $\frac{1}{4}$		
	Michaelmas,				
1760,	Lady-Day,	}	4 3 $\frac{3}{4}$		
	Michaelmas,				
1761,	Lady-Day,	}	5 0		
	Michaelmas,				
1762,	Lady-Day,	}	4 9		
	Michaelmas,				

In the price of malt, the 6*d.* a bushel tax is not charged.

The way that the college comes at these prices, is this:

The college baker and brewer attend Windfor market on the market-days next before Lady-Day and Michaelmas, and bring an account of the highest price that wheat and malt is sold for, in the market that day, to the provost and fellows.

It is in the tenant's option, whether he will pay his wheat and malt in kind, or in money at the market price.

If the malt is paid for in money, it is the custom for the college to abate 6*d.* in the bushel, which is the malt-tax.

By the Late Martin Folkes Esq^r P.R.S.

A Table exhibiting the standard of our Silver Money, as to goodneſs, with the true weight of 240 Pennies, 60 Groats, 20. Shillings, or a Pound Sterling in tale; as also the intrinsic value of so much Silver as was contained in the same, at the several times noted in the first column, with the same value expressed in decimals of our present sterling Pound: whereby the proportion may immediately be known, of any former nominal sum of money, to the intrinsic value of so much money, as is now called by the same appellation. For Example. Salisbury Cathedral is said to have cost, in the time of HEN. III. 42 000 Marks or 28000 L. which sum multiplied by 2.906 answers to 81368 L. of our present money.

Year of the King's reign and A.D.	Standard of the silv.	Weight of XX lb. in tale.	Value of the same in present money.		Proportion.	Price of fine Gold in the Engl. Coin.
Conquest, 1066	Old Sterl.	oz. dwt. gr.	l.	s.	d.	From 1353 to 1603 fine Gold was valued at about 11 times the price of fine Silver: or it was worth, of our present money by the Ounce Troy nearly 3 L. 1 s. 6 d. In 1604 it was valued by the Ounce at 3 : 7 : 6. 1620 3 : 14 : 6. 1663 4 : 0 : 10. 1717 4 : 5 : 0. An Ounce Troy of fine Silver is now worth nearly 5 s. 7 d. 1748.
28 EDW. I. 1300	{ or silver ele- ven ounces two penny weight in the pound fine to eighteen penny weight alloy. oz. dwt.	11 05 00	2	18	01 24.	2.900
18 EDW. III. 1344		11 02 05	2	17	05 14.	2.871
20 SAME. 1346		10 03 00	2	12	05 14.	2.622
27 SAME. 1353		10 00 00	2	11	08	2.583
13 HEN. IV. 1412		9 00 00	2	06	06	2.325
4 EDW. IV. 1464		7 10 00	1	18	09	1.937
18 HEN. VIII. 1527		6 00 00	1	11	00	1.55
		5 06 16	1	07	06 34.	1.378
31 SAME. 1543	W. 1 2	5 00 00	1	03	03 14.	1.163
36 SAME. 1545	W. 5 2		0	13	11 24.	0.608
37 SAME. 1546	W. 7 2		0	09	03 34.	0.466
3 EDW. VI. 1549	W. 5 2	3 06 16				
5 SAME. 1551	W. 8 2		0	04	07 34.	0.232
6 SAME. 1551	W. 0 1	4 00 00	1	00	06 34.	1.028
1 MARY. 1553	W. 0 2		1	00	05 34.	1.024
2 ELIZ. 1560	Old Sterl.		1	00	08	1.033
43 SAME. 1601		3 17 10	1	00	00	1.000

W. 1:2 &c. signifies ^{oz. dwt.} 1:2 &c. in the pound Troy more than Old Sterling or Standard Silver.

NUMBER XLIII.

A Letter to the Editors, explaining the Use of the annexed Table of Silver Coins, composed by the late Martin Folkes, Esq; President of the Royal Society.

GENTLEMEN,

ABOUT the year 1748, perusing the table of silver coins composed by the late very learned and ingenious Martin Folkes, Esq; president of the royal society, I was pleased with a short table, exhibiting, at one view, the standard of our silver money as to goodness, together with the true weight of two hundred and forty pennies, sixty groats, or twenty shillings, making the pound sterling in tale; and the present intrinsic value of so much silver, as was respectively contained in the same pound sterling, at the several times there noted in the first column; to which was added, in the last column, the same intrinsic value of the nominal pound sterling, expressed in decimals of our present sterling pound: whereby the proportion of the intrinsic value of any former sums of money, mentioned in books, to the intrinsic value of so much money as is now called by the same appellation, may immediately be known; and the prices of provisions, labour, and materials, in former times, may readily be compared with the different prices which the like provisions, labour, and materials, are found to bear at this day.

But the table above referred to is not intelligible to all readers, as the symbol W, which signifies worse than standard, is not explained.

It was proposed to Mr. Folkes, to make a new table with explanations and additions; which he did, and it has been engraved; and from thence you have struck off copies, of which the following is one. I am,

GENTLEMEN,

Your most obedient servant,

Y. Z.

N U M-

NUMBER XLIV.

A Letter to Mr. Robt. Davis, on the Use of Cragg as a Manure in Suffolk.

SIR,

I DO not know whether the manure made use of in Suffolk is so generally known in other parts of England as it ought; I mean, in those counties that are bounded by the ocean.

This is what the Suffolk farmers call *cragg*, and which is the remains of marine shells of various kinds, and in which the greatest part of the cliffs on the British coast abound; and in many places they are to be seen forty or fifty feet higher than the sea ever rises, and are also to be found in many inland places. How they came there, is the business of naturalists to enquire.

My business, at present, is to inform the farmer, that wherever this *cragg* is to be found, near, or on his farm, he has found a treasure; for with it he may warm and meliorate all his cold, wet, or clay land, so as to render it inferior to none; and I have strong reason to believe there are few parts of this island, wherein this *cragg* may not be found, even in the most inland counties.

It is but a few years since this ready-prepared lime has been used in Suffolk; and the farmers, who had long leases on exhausted lands, have, in consequence of this discovery, become rich with the use of it; and wherever it can be found, it will be productive of the same success.

The imperceptible manner in which the sea steals from one coast, and lends to another, passes almost unnoticed by each generation of men; but there is great reason to believe that every part of this island has been, at some time or other, possessed by the sea. I have, myself, seen (many hundred miles from the sea, on the continent of America) a quantity of oyster-shells, sufficient to have built a city; which

which could have come there by no other than a natural cause.

If this hint be worthy of a place in your useful book, I may be encouraged thereby to convey some further information to you on other matters, being,

S I R, Your's, &c.

A SUFFOLK FARMER.

N U M B E R XLV.

A Letter from a Farmer to the Editors, on a Method of preventing Pigeons from destroying Peas, Vetches, &c. when first sown.

GENTLEMEN,

I Suppose you do not always require that your correspondents should be people of consequence: I, for my part, am a plain farmer, yet, I hope, an honest man; and as I have some thought and reflection, as well as my betters, it is not impossible but my letter may be, in some measure, worthy of your notice.

Last year I sowed, and had five acres of peas, or should have had, at least; for soon after they were sown, being greatly infested by a rich neighbour's large flock of pigeons, much of the seed was devoured. I did all I could to fright them away; shot at them with powder (for I dared not to kill them, as the dove-cote they belonged to, was a legal one, and my neighbour but a crabbed sort of an old fellow): I set a boy to watch them, I put up scare crows, but all in vain; and I soon perceived there was a great probability of my whole crop being destroyed by these furious enemies.

My next step, therefore, was to apply to my neighbour, and beg of him to feed his pigeons at home for a few weeks: this he refused to do, as he said, on account of the trouble, though I offered to contribute a few bushels of off-corn to do it withall.

My

My case grew now quite desperate, and I knew not, for some time, which way to turn myself for a remedy: at last I applied to a bird-catcher in the town, who had a very large pair of spring-nets, and who undertook, for a crown, to catch as many of them for me as I would. I struck the bargain immediately, and we soon baited the ground properly to attract them to a particular part of the land. My companion made good his word, for in the space of two days he caught me above sixteen dozen; which I let fly again, but not before I had cut off their tails, that their owner might know where they had been visiting.

This cutting off their tails was the only thing I could do to protect myself from their depredations: it caused them to keep at home, for they were no sooner returned to the dove-cote, but it became a prison to them; for they cannot bolt, or fly out of the tops of the cote, but by the assistance and strength of their tails.

My neighbour, at the two days end, finding his flight of pigeons so much thinned, and being told that I should say I would do for them, charged me with destroying them, and threatened to prosecute me, as the statute in that case directs; but I knew my innocence, therefore defied him to do his worst. He went immediately to a lawyer, who told him, that nothing could be done without evidence: my neighbour then went home, and taking with him one of his men, to witness how many pigeons had been destroyed within two days, went to the dovecote, when opening the door he was not a little surprised to find near two hundred prisoners fluttering about without their tails, and ready to eat one another for hunger.

When he found how I had served him, he sent for me, and with a less haughty air than he had before assumed, requested I would not disfigure any more of his pigeons, promising to feed them regularly every day till my peas were out of danger. By this contrivance I saved near half my crop, and thought myself very well off.

My reason for sending you this account is, that others may be taught how to defend themselves on a like occasion.

I sup-

I suppose other means may be found of catching them besides a net. I am, with great respect,

GENTLEMEN,

Cambridgeshire,

Your very humble servant,

March 6, 1764.

J. SMITH.

NUMBER XLVI.

A Letter to the Editors, recommending a Method of making Beech Wood more durable.

GENTLEMEN,

I Cannot help congratulating you on your happy thought of giving farmers, and others, an opportunity of publishing their sentiments to the world, by means of your very useful collection. I acknowledge, I have greatly benefited, by reading that part of your work which has already made its appearance in public, and have not the least doubt of being equally entertained and instructed by what is to come.

Being willing to contribute my mite towards the *Museum Rusticum*, I now take pen in hand to give you some account of a method I have long used of making beech timber, when wrought into different forms, more durable than it naturally is.

This wood is well known to be very much subject to breed the worm, which presently destroys it: this worm is supposed, not without reason, to feed on the sap that remains in the wood after it is cut out into scantlings, and wrought up; therefore I imagined the best way to preserve it was, to take away the food that the worm fed on, by extracting, in some manner, the sap.

There was, as I have been informed, some years ago, an attempt made to prepare beech-timber in such a manner, as to make it fit for the purposes for which elm is often used in ship-building; and a patent was obtained for the invention; but I never heard of this scheme meeting with

encouragement, which I am apt to think might partly be owing to the expence attending the preparation of the timber.

The manner in which it was done was as follows. After the timber was sawed into scantlings, or hewed only, if it was to be used in an entire piece, it was laid in a bed of sand, which sand was contained in a building of brickwork, contrived in such a manner as to be heated, by means of properly-disposed furnaces, to any degree.

This heating of the sand caused the wood, which it covered, to sweat out its sap, which was all imbibed by the dry sand, and the timber was left, after the operation, in a state much improved.

I do not deny but that this method was very efficacious, but it appears on the face of it to be expensive.

I use, for the purpose of improving this wood, two several methods. When the scantlings are large, I lay them, after they are rough-wrought, to soak in a pond of water for some weeks, more or less, according to the girth of the pieces, and the season of the year; in the heat of summer the operation is soonest done. If they are planks, or boards, and there is danger of their warping, I lay them to dry under cover from the sun and rain, putting bits of laths betwixt the boards to prevent their lying close together, and a considerable weight of stones, &c. over all. If they are blocks of a large scantling, for beams, joists, &c. for which this wood is sometimes used, I take no other caution than letting them dry gradually without being exposed either to the sun, or the rain, which would be apt to make them shiver, and be spoilt in the working.

This first method, you will perhaps say, is very easy: and indeed I have found it so; neither did it ever fail me; but the timber, when applied to use, was at least as good, and as durable, as elm.

I am a very old man, Gentlemen; and between thirty and forty years ago, I made an addition to my house, which, with some land about it, is my freehold. For the beams, joists, and many of the floors, I used this wood, prepared

as

as above, which are to this day as sound as ever, and likely to remain so: I had, however, the precaution to give the wood a thick coat of pitch, wherever it touched the brick-work; for it does not love any kind of dampness, which inclines it to rot, like elm; but keep it dry, and I cannot say how long it will last in my method of preparing it.

The beech, I used in my house, was felled in the heat of summer, when in full sap, as I judged the sap was at that season in the most fluid state, and would the readier quit the wood than when it was dead, and congealed, as it were, in an inactive state in winter.

If I remember right, the beams and larger pieces were left above twenty weeks in the pond, the joists and rafters about twelve weeks, and the thinner boards eight; and afterwards they were all gradually dried in the manner above directed.

I am now to inform you in what manner I manage this wood for smaller works; and in this way I have wrought a great deal of it myself.

I have, in a back house, erected a large copper, which holds near two hogheads, in which I boil, for two or three hours, all the beech wood I employ in smaller uses, which is no inconsiderable quantity in a year, being a chair-maker and turner by trade. This way of managing the wood takes out all the sap; it works pleasanter, is more beautiful when finished, and lasts, without comparison, longer.

After I have boiled my wood for two or three hours, before I dry it I bestow another short boil on it, of about a quarter of an hour, in some fresh water, the first being strongly impregnated with the sap, and acquiring a high colour, and a bitter taste.

I have often thought, that for many uses it would be a great improvement of this wood, if it was a third time to be boiled in some vegetable oil, or, at least, if not boiled in it, managed in some manner that the pores of the wood should be filled with the fat juice; but as this is expensive, and I had no immediate occasion for such an improvement, I never made the trial; and it is too late in life for me to do it now; though, was I younger, as I

have acquired, by my industry, a competence, I would certainly make the experiment, was it only to satisfy my curiosity: as the case really stands, I leave it to be done by others. I am,

GENTLEMEN, with great respect,

Your humble servant,

March 10, 1764.

A YEOMAN ARTIZAN.

NUMBER XLVII.

A Letter to the Editors, recommending a Plant, called the New Lucern, for Culture, as an artificial Pasture.

GENTLEMEN,

AS you have already allotted several parts of your work to the improving the culture of artificial grasses, and have, in the course of it, given the most approved methods of managing Lucerne, &c. &c. I beg leave to recommend to your attention *The new Lucern*, it appearing to me, from a description of it I lately read *, to be worth enquiring after.

I am apt to believe the author of the work mentioned in the note had no actual experience of it himself; but as he mentions its being a native of England, the flourishing condition of its wild state, and the great advantage the Swedes reap from it in a cultivated one, I should imagine (in case you think his description of it so much worth notice as to be inserted in your useful publication) it may induce some of your ingenious readers to try it; or, supposing any of them have done so, to communicate their success, by your means, to the public. The author referred to says, that this plant will live very well, in common, with the ordinary grass that is met with in pastures. This, if fact, is no small advantage over the common lucern in this country of verdure, in most parts of which the natural grass

* In a Book entitled *The Farmer's Complete Guide*, 1760, 8vo.

grafs of the foil is with great difficulty kept under. Notwithstanding this author fays, that the horfe-hoeing husbandry will beft fuit the new lucern; yet from his description of the plant * I fhould imagine it might grow very well, fown broad-cast, in fome fuch method as Mr. Rocque has directed lucern to be fown, efpecially as it has the advantage above mentioned of not being hurt by the growth of common grafs. As you may not have the book at hand, I have enclosed you a copy of the chapter which treats of it †, and am,

GENTLEMEN,

Your well-wifher and humble fervant,

Z. Y.

* The writer, our correspondent refers to, fays, the new lucern is a kind of medick trefoil, known from the reft by its robust ftature, and flat twifted feed veffels; that we have it by way fides, and on wafte grounds in Hertfordfhire, and the adjoining counties, but not very common; that the root is perennial, and fpreads far, as well as runs deep, in the ground; that the plant is fifteen inches high, and full of branches, in its wild ftate; and that it may be made much larger by culture.

† We are forry it is out of our power to oblige our correspondent by inserting the extract of which he was fo kind as to favour us with a copy; but he cannot be at a lofs to know that our work is principally dedicated to original compositions, fent us from time to time; and as we are, through the favour of the public, at no lofs for materials, we could not comply with his request without difobliging many: befides, we do not remember ever to have heard of the plant in queftion being cultivated in England as an artificial pafture, though it may, probably, answer very well in that intention, as many others of the fame nature do. A.

NUMBER XLVIII.

*A Letter to the Editors, relative to the Use of Burnet
Roots in Dying*.*

GENTLEMEN,

Consulting Ray's *Historia Plantarum*, in relation to burnet, which is lately so deservedly become the object of public attention, I found in his account of the *Pimpinella Sanguisorba*, page 401, the following sentence.

“*Hujus radici adnascitur quibusdam in locis granum rubrum, quo utuntur tinctorum ad colorem carmesinum, unde sunt qui pro cocco habent, et coccum radicem appellant, momentibus lacuna et anguillara*”.

Upon so good an authority, I thought it worth communicating to the public; especially as the *Pimpinella sanguisorba major* seems to be the plant cultivated by Mr. Rocque. I am,

GENTLEMEN,

Your humble servant, &c.

NUMBER XLIX.

*A Letter to the Editors, recommending Lime as an excellent
Manure in the Culture of Potatoes, being now practised
to great Advantage in the Isle of Man.*

GENTLEMEN,

I AM one of your constant readers, and doubt not, but your plan will be of infinite service to the nation in general: through it, such as have acquired experience in agricul-

* Mr. Ray observes, that there are annexed to the root of burnet certain red tubercles, or buttons, which the dyers use in forming their crimson colours, many substituting them for cochineal, and calling them the cochineal root, or the ground cochineal, recommending their being infused in soft stagnant water.

agriculture, and other commercial knowledge, will be able to publish what they know; whereas, before, if a man had not sufficient materials, or abilities, to make a performance fit to appear in the world, the knowledge he had acquired of necessity lay dormant; and it cannot be disputed but that many useful truths have been lost, for want of such a conveyance as your *Museum Rusticum*.

In Volume the First, N^o. LXXXIII. page 365. Mr. Irwin, treating on the culture of potatoes, mentions, that *lime would very probably answer*; which he is very right in, for in the Isle of Man, though they are no farmers, yet they cultivate exceeding fine potatoes, as they are their principal food.

Some bring in different sorts of land by the means of them: in moory ground, after the heath is burnt off it, they mark out the beds, upon which they spread out the lime in near about the same quantity that is required in liming ground, or rather more; upon which they lay the seed in the usual manner, and, after cutting the turf in the furrow, lay it on the verge of the bed with the heathy side undermost, and cover them over with the mold out of the furrow in the common method.

After coming up, they weed, or give them a slight covering, to keep down the weeds.

When they raise them, it takes a little more labour; yet while they are digging a crop of very fine dry potatoes, they are gaining a piece of ground, which was before useless, and making it fit for plowing and bearing corn the year following.

Lime is found also to be of excellent service to potatoes in cold sour land, which they manage after the same manner, and reap potatoes greatly excelling those without lime, on the same ground.

Lime is certainly a very fine manure for potatoes: they use it in the isle above mentioned, without any other thing, on all sorts of land, even upon a light, rich, limestone soil; and it betters the quality of the potato surprisingly: besides fermenting and meliorating the soil, it has the property
of

of attracting and absorbing any cold sour matter which may be prejudicial to vegetation.

About Castletown, in the same isle *, they take a great deal of care in their culture of potatoes, and their product pays them very well for their trouble.

After marking out the bed with their spade, and spreading on the dung, or lime, they begin at one end, and dig across the bed, making it a spadeful, all along, higher than the neighbouring ground.

Then they dig and cast the mold out of the furrows upon the bed, in the common method; and after finishing it, they, with a kind of dibble, or shaft of a spade shod with iron, some round and sharp, others square, about three or four inches broad, plant in the seed, about six or more inches distance one from another; and when they come up above ground, they weed them as clean as a garden, and after they are stronger and higher, with a hoe earth up the mould about the stalks; by which they kill the weeds, and have exceeding fine potatoes.

The above method is a very good one, proved to be so by experience: if, therefore, it may be of any use to your readers, you may publish it; if not, in omitting it you will very much oblige,

GENTLEMEN,

Liverpoole,
April 14, 1764.

Your very humble servant,
J. M. C.

* We should be glad of some farther account of the state of agriculture in the Isle of Man, from this gentleman, whose future correspondence will much oblige us. E.

NUMBER L.

A Letter to the Editors, in which the Tear of Nettles is recommended as a Substitute for Flax in the Linen Manufactories.

GENTLEMEN,

I Observe one of your correspondents recommends a trial to be made of sundry articles, as substitutes for linen rags in the manufacture of paper*; which scheme I readily approve of, and further add, that I have reason to believe, from some little experience, that there are several vegetables which might not only be made serviceable to the paper, but other manufactories; especially at this time, when the prices of yarns are rendered exorbitant through the uncommon scarcity of flax.

What I would now recommend to your consideration is that noxious weed the nettle, being more fibrous than any thing of the kind I am acquainted with, and containing a greater quantity of tear (as the dressers of flax term it) if properly managed.

Though the staple be short, yet 'tis long enough to dress, and of a fine quality, fit for manufactures, which require a good round or coarse thread.

You are, no doubt, acquainted with its being in use (I think) in some parts of Germany; and why may it not in England?

If this be found to have any probability of succeeding, there is no doubt of its having your attention to promote it, as well as any other hint for the good of the public.

I am, GENTLEMEN,

April 14, 1764.

Your most obedient, &c.

* See Volume the First, Number XXXVII. Page 177.

NUMBER LI.

A Letter to the Editors, containing Observations on the Disease of Black Cattle, called the Yellows, together with its Causes, Consequences, and Symptoms; with an effectual Cure.

GENTLEMEN,

HAVING noted the frequent fatal effects of the disease in cattle, called the yellows, I, some years since, resolved to let no opportunity slip of being acquainted with this complaint, in order to assign its cause, in-as-much as I apprehend it to be the forerunner of most chro-nical diseases, to which great cattle are subject, as the mur-rain in the guts, scowering, asthma or wheezing, drop-sy, and loss of milk, &c.

I have not hitherto been able to find any author who has treated of this complaint in a manner suitable to the con-sequence thereof, so as to trace the symptoms in its several stages, in order to effect a cure; and, where this complaint has been quite neglected or ill cured, to point out the con-sequence, by shewing how it may appear under the above-mentioned shapes, which, being mistaken for originals when they are only consequents, are rarely cured, through the first cause being unknown.

This complaint, I apprehend, proceeds from a waste of bile, that is, a preternatural running out of what is called gall; occasioned by the *rugæ*, which are in the inner mem-brane of the neck of the *biliary duct*, becoming, by some accident, too weak to perform their office, so that the gall runs out of the bladder nearly as fast as it runs in; by which means it forceth itself, or a considerable part at least, into the *porus bilarius*, instead of being discharged by the *ductus communis cholidochus* into the intestines, and, by the means of the *vēna porta*, mixes again with the blood, filling that with its sharp pungent quality; which causeth that fluid to be-

come of a fizy nature, and, consequently, to move slowly in the channels through which it passes; whence arises that sluggish disposition the beast in this complaint is subject to, and which is one of the first symptoms of the disease.

And the liver, being deprived of the natural heat and weight thereof, is, together with the siziness of the blood, rendered incapable of performing its office, so that the supply of bile is not equal to the expence; nor is the blood purified from it as it ought, but passes on together till it fixes in some part, and there (if not timely prevented) forms a tumor very prejudicial to the beast.

These tumors I have seen appear externally in the glands behind the ears, of the shoulders, and of the flank, in the dewlap, round the cornet of the hoofs, and in the udder, or milk-bag; internally, in the form of water, in the veins of fat between the muscular parts of the body, in the kidney fat, and even between the coats of the guts.

When these tumors, which appear externally, come to suppuration, the beast commonly recovers, though frequently it be a long time first.

The seasons of the year in which cattle are most subject to this complaint, are for about the five first weeks after they are put out to grass in the spring, during which time the season is apt to be very warm at days and cold at nights; the grass being also tender, and abounding with moisture; and in like manner in autumn; at which time the days are also warm and nights cold; and the grass, on account of autumnal rains, tender as in the spring, and more so, if the preceding summer was tolerably dry.

The cattle at these seasons being faint are very subject to perspire much, by which the pores are greatly opened in the day, and sudden cold coming on at night hastily contracts them; and before the warmth of the next day becomes sufficient to set the parts thus contracted at liberty, the matter, which should have been discharged by perspiration, returns into the blood in order to pass off by urine, by which means a much greater quantity of bile is secreted than otherways would; which passing into its receptacle, the gall-

bladder, causes it to extend to a preternatural size ; thereby extending the passage by its pressure, till the *rugæ* are scarcely to be seen : whereby the resistance made by them is not equal to the pressure of the bile, which, consequently, forces its way hastily into the blood, in the manner before observed, instead of passing off as excrement by the guts.

The early symptoms attending this disease, are, a shaking of the beast in a morning, and more particularly the hinder parts, as the loins, thighs, and legs ; hollowness of the eyes, and the hair staring ; a dry nose, and if the cold taken be great, hanging of the ears, swelling of the dewlap, of the glands of the ears, the shoulders, or the flanks, and of one or more quarters of the udder, or milk-bag in cows ; with a sudden decrease of milk, what remains becoming, after a few days, more yellow than usual, and will, if boiled, curdle : the fore teeth are generally loose, as though they would drop out.

If these symptoms, especially the first, remain unobserved, as is often the case in barren cattle, and such as range at large, it frequently happens that the disorder settles in some inward part ; as on the *pericardium*, which causes wheezing, and the *hask*, and *uncommon poverty* ; when in the guts and *mesentery*, (or sweet bread) causes the *lask* and *scowering* ; and when in the vein of fat, between the muscles, causes the *dropsy* and *uncommon weakness*.

In this last complaint, on opening a beast, the *melt* or *spleen* was very small and thin, not half so large as in a healthy state, as was also the liver ; but otherways sound and perfect, the gall-bladder of an uncommon thickness, and its contents very little.

In opening a beast which was wasted, and subject to wheezing and the *hask*, the *pericardium* was become hard, and inclined to callosity towards the part which joined the heart : the heart unusually large, but sound : the lights very sound, but small : the melt or spleen thin and withered : and the liver dryish, with a few small hard knobs therein : the gall-bladder near as the former.

I have

I have observed these bowels in others, and generally found the gall-bladder, liver, and spleen, less or more affected; those which had *the lask*, and scowered, generally having their guts covered, the inside with a large quantity of *mucus* resembling frogs spawn: the flesh of these is always of a yellow cast.

Having said thus much of what I apprehend the cause, I will now prescribe what I have very many times known used with good success for a cure.

First, Suffer no blood to be taken away from the beast.

Take a handful of *rue tops*, the like quantity of the *greater celendine*; shred them small, and mix with them one ounce of *turmeric* root in powder (or instead thereof *red sanders*); put these in three pints of stale old ale or beer, and cause it just to boil up; when it is cold enough, give it the beast warm: there is no occasion to keep the beast in before or after, unless the inclemency of weather oblige.

Two of these drinks, at forty-eight hours distance, will perfect a cure, if the disease be not of long standing.

Should a scowering be come on, then, after the first drink, give the following on the intermediate days.

Take two pound of *oak bark*, boil it in one gallon of water till one fourth be consumed; strain it; in this water boil two pound of *rice* till it be soft; mix with it half a pound of the *burnt crust of bread*, taken from the under-side of the loaf; and to all this put two quarts of *milk*; let it boil for twenty minutes; divide it in two parts, and give one to the beast at a time warm.

I have here presented my sentiments on this disease in cattle, which I doubt not, but will, if observed, be attended with some success. But my principal aim was to begin a subject, which hath been hitherto unnoticed in these monthly collections, and thereby induce some more capable person, amongst the readers thereof, to write on the improvements and diseases of black cattle; a subject worthy the attention of every public-spirited person, and hitherto much neglected.

I have

I have some more papers on other subjects in store, and may (as leisure will permit) communicate *.

RURICOLA GLOCESTRIS.

L.

P. S. Please to inform S. T. of Tyne, that mercenary views are inconsistent with a public-spirited undertaking; and that the design of these publications is to communicate knowledge, and for no other cause but the innate pleasure of doing good.

NUMBER LII.

A Letter to the Editors, on the Advantages of making good Roads, or Waggon-Ways, in a Farm.

GENTLEMEN,

MY present purpose is to communicate to you a part of my experience, in a matter which you would, perhaps, little expect to see treated of by a common farmer. I mean that of road-making, a thing too little attended to by the landholders in this island.

It was my fortune, Gentlemen, if I may so term it, to be born a farmer, as the land I now hold was occupied by my father and grand-father above fifty years before I saw the light.

My dwelling is a part of the old manor-house; and before it is an avenue above half a mile long, which leads into the great road: this avenue is, on each side, planted with rows of elms, which shade the road between them in such a manner,

* We acknowledge ourselves greatly obliged to our public-spirited correspondent for this, as well as for past favours. His letters will always be well received, and we have no doubt of their answering the end he proposes; that is, promoting useful knowledge. R. E.

a manner, that for many years it was, for some months in the year, almost impassable for heavy carriages.

The evil was also increased by the nature of the soil, which is a porous spongy loam over a bed of tough clay.

Neither my father nor grand-father ever thought of mending the waggon-way of this avenue: they were content to use it when it was passable, and at other times dragged their loaded waggons, with double teams, over the plowed land, making a fresh track almost every time they passed.

This inconvenience I could by no means brook, but was determined immediately after my father's death to apply a remedy.

I accordingly spoke to my landlord, and requested him either to cut down the elms, or permit me to shrowd them, that the sun beams might have a free passage to the road, and dry away the superfluous moisture; but he would consent to neither, telling me that if I did not like the road my ancestors had used, I was welcome to make a new one, but should not spoil the aspect of his avenue by dismembering such fine thriving trees.

I was, for some time, puzzled in what manner to proceed, well knowing, that to make a new road would be very expensive, besides the loss of ground that would ensue.

I was not, however, discouraged, but determined to accomplish my purpose, which I did in the following manner.

But, before I relate the manner in which I made my new road, as I may call it, it will be proper to observe, that the above-mentioned avenue runs due north and south; and that the land, for at least two rods on each side, produced little or nothing, owing to its being continually impoverished by the roots of the elms, which spread wide, and at no great distance from the surface.

The old road of the avenue betwixt the trees is about eighteen feet wide, and the soil as above described.

Matters being in this situation, I took the uncommon resolution of making two new roads, one on each side the
avenue,

avenue, besides repairing the old one. It is true, I wanted not money, being possessed of a little freehold estate, amounting to rather more than four hundred pounds a year, besides my farm.

My first step was to level the whole ground I intended to make into a road: I do not mean to bring it to a true level, but to pare away the excrescences and fill up the cavities, so as to give it a uniform surface.

I have already observed that the road betwixt the elms is about eighteen feet wide: to this I added ten feet on each side, without the trees; which made the whole road about forty feet wide.

In levelling the ground I caused the middle of the avenue to be laid about one foot and a half higher than the edges of the road without the trees, so that the breadth of the whole road formed the segment of a large circle: wherever the soil appeared very spongy, I laid green shrowdings of trees, not in faggots, but disposed in layers or beds, and covered with clay.

The next thing I did was to dig a trench on each side the road, to serve by way of drains to carry off the water: the earth, cast out of these drains, formed banks next the road; through the bottom of which were gutters to give a passage to the water.

The work I have already mentioned was all done in the spring of the year, being finished by the latter end of May: in this situation I suffered it to remain for three months, till the hurry of my hay and corn harvest was pretty well over.

In the beginning of September I found that the sun had done me great service, by drying the loam in such a manner, as to put it in condition of mixing, uniting, and binding, with the gravel afterwards laid on: I accordingly set a number of gravel carts and labourers to work; but should first observe, that during the three summer months, I suffered no carriages to go on my embryo of a road.

The coat of gravel I laid on this road was of a different thickness: in the avenue between the trees I allowed
only

only six inches of gravel ; whereas, withoutside the trees, the gravel was laid at least a foot thick.

I had several reasons for this management. First, I did it to save gravel, and, of course, labour : in the next place, I thought it very unnecessary to make this part of the road so substantial as the outsides, as it was not my intention to permit any carriages to go on it, being reserved for a bridle-way ; in which intention it has answered very well, being never out of repair. The outside roads I reserve for the traffic of my carriages ; one serving for such as are coming towards my house, the other for such as are going from it ; which rule I always insist on being religiously attended to.

When the gravel was laid on, and raked level, the whole road was passed over by my iron cylindrical rollers, which, in some measure, smoothed the surface ; but it was not yet hard enough for carriages : I therefore contrived to fix over some of my rollers a kind of strong wooden trough, that would hold two tons of stones ; and thus loaded, I dragged them over the surface of my road, which made it as firm and hard as I could desire.

It is near ten years since I made this road, in all which time it has never cost me ten pounds repairing it ; and I assure you it has an elegant aspect, and has been of such use to me as to have already saved me some hundreds in horse-flesh, horse-keeping, and wear and tear of my waggons, carts, tumbrils, &c. not to mention how much more expeditiously my work, of every kind, is now done ; the road, as you may imagine, running through the middle of my farm ; and I particularly feel the advantages of it in a catching, or wet, harvest.

The expence of making this road was not so great as some of your readers may imagine : it cost me, on a supposition that I was to make a fair charge of every article, about one hundred and fifty pounds, which I esteem a trifle, for so great and lasting a convenience, in so large a farm.

I must not, however, omit mentioning the generosity of my landlord, who, when he came, as usual, the next year, to pay me a visit, was greatly surpris'd at what I had

done ; and insisted on abating me one hundred pounds of the rent I was paying him, as some sort of compensation (for so he expressed it) for the trouble and expence I had been at, in making an improvement on his estate, so very useful, and at the same time so ornamental.

Some of your readers may possibly imagine, that this account can be of very little use to middling farmers ; but I must beg leave to assert, that it is the interest of every farmer to make, as far as lies in his power, the ways of communication in his land as practicable as possible.

I am, GENTLEMEN,

Your humble servant,

North of London, 1764.

I. K.

N U M B E R LIII.

A Letter from a Manufacturer in Spitalfields, proposing a Remedy for the Decay of the Silk Trade in England.

GENTLEMEN,

I Hope you will not think it inconsistent with the plan of your work, to admit in your collection a few of my thoughts on the subject of the decay of trade amongst the silk manufacturers in London.

I the rather chuse your work as a channel to convey my sentiments to those in power, as I imagine it, on account of the merit of its contents, to be read by most of the men of genius in the kingdom ; of a genius, I mean, for the improvement of our agriculture, trade, and manufactures.

But not to detain you too long with unnecessary preamble, it seems on all hands acknowledged, that the silk trade is lately gone strangely to decay ; and this decay must indeed almost wholly be attributed to the great encouragement given, by that dæmon *false taste*, to the consumption of French silks in England. This impolitic taste is generally acquired by a short trip to Paris, and on the return of

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our travellers, who, for the most part, bring back with them a cargo of clothes for themselves and friends: the infection spreads, and every one of their acquaintance must forthwith be equipped in the same taste.

This is but the beginning of the evil which I have pointed out; for though every person of fashion, possessed by this evil spirit, must be decked in French manufactures, yet it is not convenient for every one to go to France to fetch them; and it is well known the duties on such commodities are so high as to amount almost to a prohibition; yet, after all, these persons of fashion must be supplied, which they generally are in the following manner.

It is almost unnecessary to observe that the silk mercers are supplied with the means of living by the silk weavers and manufacturers; yet are they some of them so ungrateful as to betray their benefactors, by a fraudulent, illicit, and underhand importation of French silks, for the purpose of serving their customers, the persons of fashion above described.

This then is the channel by which the French silks are distributed in London; and the French tailors, and French habit and mantua makers, are the people who carry the pattern-books from house to house, and promote the sale of them as much as in them lies.

Would the mercers once determine, neither to buy nor sell any French silks on any account or consideration whatever, the trade of smuggling, in this article at least, would soon be at an end; for it would be impossible that one half of the quantity that is now consumed could be circulated without the assistance of the mercers, who sacrifice the good of their country to serve their natural enemies and indefatigable rivals.

I would not however, after all, be thought to insinuate that all the mercers sell French silks: no, there are some among them who are too conscientious to do it; yet do many of these sell English-manufactured goods with great seeming caution, as if they had privately imported them from France; and the reason they assign for this, as they

call it, honest fraud, is, that were they to tell their customers that the silks they offer were manufactured in Spitalfields, they would be rejected, neglected, and lie on their hands. If this is true, must we not esteem it strange that a nation should be so infatuated, so depraved, so lost to all true taste, and all sense of public spirit, or patriotism?

I fear it is too true: this at least I am sensible of, that we have received many orders from the mercers to weave several sorts of silks after the patterns of those wrought in the French manufactories.

Were we not at least as capable of making good silks as the French, I should not be so much inclined to blame the reigning taste; but when it is on all hands acknowledged, that our manufactures exceed theirs by far; when this is, I say, even by themselves acknowledged, who that has feeling, who that has the least spark of love for his country left, can bear it with any degree of patience? I own myself interested; yet am I far from feeling wholly for myself; I have the sentiments of an Englishman, love my country, and wish that every branch of her manufactures may equally flourish and prosper.

But, after all, to murmur, be dissatisfied, and complain, will do but little good: a remedy must be applied; and this can never be done, unless it is first thought of, and proposed to those who have the executive power.

This, Gentlemen, was the cause of my writing to you, intending to submit to the consideration of the public, a remedy for this great, this crying evil.

I would first then propose, that diligent and frequent search should be made after smuggled French silks; and when once a lot was seized, it should, on no consideration whatever, be restored to the person it was taken from, which is not unfrequently the case; for when a French taylor, or mercer, meets with such an accident, he instantly applies to his countryman, my lord's valet, or to Mademoiselle, the waiting-maid, and all is sure to be set right.

These practices I would wish to be entirely abolished; and a little resolution would do it.

In

In the next place, a fine of five hundred pounds, to be rigorously levied, should be laid on every mercer, or other person, who should presume to sell English silks as if imported from France, as it is this scandalous custom which chiefly occasions the spreading of this false, though reigning taste.

No persons, but such as were qualified by their estates to sit in the house of commons, and their wives and daughters, should be licensed to wear French silks; and every such person should pay twenty pounds a year for the licence, and their names and places of abode published quarterly, at length, in the London Gazette, that people might know who were licensed to betray their country by encouraging the trade of its mortal enemies,

No mercer should sell to any person any French silks, unless such licence was first produced, and the person producing it averred him or her self to be the party described and mentioned therein, under the penalty of five hundred pounds.

Any persons, buying French silks by means of a licence not granted to themselves, to forfeit fifty pounds; and one hundred pounds to be the penalty for wearing French silks without a licence first had and obtained, or for procuring such licence without being qualified, as above, to enjoy it.

Every mercer intending to sell French silks to be obliged to take out a licence for such purpose; for which licence he should pay forty pounds *per annum*; a very small sum when compared with the money they now annually get by that single article.

Every mercer, selling French silks, to be obliged to keep a regular account of his stock of such silks, with its increase and decrease, making regular entries of whom he makes his purchases, describing the lots, and entering the names also of the parties to whom he sells such goods, with their nature, quantity, and prime cost; and to be subject to the inspection of the exciseman of the division he lives in, in the same manner the dealers in tea, &c. are.

All

All peers of England, Ireland, and Scotland, to be qualified to take out a licence on paying the sum of twenty pounds annually for it: the same of their ladies, sons, and daughters.

Some may, perhaps, think that these restrictions, together with the heavy duty French-wrought or manufactured silks are already loaded with, would, in fact, amount to a prohibition, as no body would wear them. I could wish, indeed, this would be the case, as the silk manufactories in England would want no other encouragement; but I fear it would be far otherwise, and that many licences would be taken out.

I will suppose that two thousand gentlemen and ladies would take out licences to wear French silks, who would annually pay for such licences *forty thousand pounds*; and this is a very moderate computation, if we consider how many *people of fashion* we have, and how much this liberty would distinguish them from the vulgar.

I shall also suppose that twenty mercers would take out licences to sell French silks to these people of fashion: this makes the whole sum raised, to amount to forty thousand eight hundred pounds.

The eight hundred pounds would very well pay the expence of collecting this tax, and the extra salaries to be given to the surveying officers; after which, there will remain forty thousand pounds to be annually disposed of.

As my scheme is entirely calculated for restoring the silk manufacture, I shall have that solely in my eye in the disposal of this money.

The sum of five thousand pounds should, in the first place, be annually applied to the relief of poor journeymen weavers, &c. with their wives and children, when sick or out of employ.

Ten thousand pounds should annually be divided into proper premiums, calculated for the encouraging every branch of this elegant and useful manufacture, to be distributed at the discretion of the society for promoting arts, &c.

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The remaining twenty-five thousand pounds I would wish to be annually, in due proportion, divided amongst the importers of raw silk ; preference being always given to such as imported the greatest quantity, of the best and most useful quality, and lowest price.

You by this time, Gentlemen, I dare say, see what I intend in this plan : my wish is to make people of fashion pay for the injury they do their country, by wearing foreign manufactures ; and, in proportion to the number of people who list themselves under the banner of false taste, will be a sum raised, annually, for encouraging our home manufacture.

It may, perhaps, be the opinion of some, that, though the number at first licensed would be great, yet in a few years all would drop off, owing to the expence attending this fashion. Should this be the consequence, my end would be answered, for it is to be supposed that when the people of fashion leave off buying and wearing French silks, they will be content with such as are manufactured in London, and the manufacturers want no encouragement for continuing in their employ, but a ready sale, at a reasonable price, for the goods as they are made.

You will, I hope, excuse this trouble from a stranger : your work being open to correspondents inclined me to rank myself in the number. I have been your constant reader from your first publication, and just as long

Your admirer,

Spital-fields,
April 19, 1764.

And humble servant,
A MANUFACTURER.

NUMBER LIV.

A Letter to the Editors, containing some Hints relative to the Art of Dying.

GENTLEMEN,

HAVING seen several hints in the art of dying in your collection, I imagine what follows will not be disagreeable to your readers.

The

The *Koreki* are a nation inhabiting the borders of *Russia*: they approach, it is true, to the nature of savages; yet ought we not to be ashamed to learn of them.

These people use deer and dog-skins for their clothing, which they dye with *alder* bark reduced to a fine powder; but their seal-skins, on which they set a higher value, they dye in a nicer manner.

The first thing they do is to clean off the hair, which they perform very dexterously, by means of sharp stones instead of knives. They then sew up the skin into the form of a bag, turning the hair-side outward: into this bag they pour a strong decoction of *alder* bark, leaving it in this situation for some days.

When this time is expired, they hang it upon a tree, and beat it with sticks till the colour has quite penetrated through the skin, so as to tinge it equally throughout. Their next operation is to rip open the bag; and stretching out the skin, they leave it in the air till it is quite dry; and lastly, they rub it with their hands, till it becomes soft and fit for use. When it has passed through all these operations, it bears some resemblance to a dressed goat-skin, and is dressed and dyed at the same time*.

These people often ornament themselves with the skins of seals dressed with the hair on; but they dye the hair of a fine red colour, with a decoction of *red whortle berries*, to which they add *alder* bark reduced to powder, *alum*, and *lac lunæ*: by this dye they get a very bright colour.

I have no doubt but that these hints may be applied to use by some of your ingenious readers, and am,

GENTLEMEN,

Mark-Lane, A constant purchaser of your work.
March 6, 1764.

J. S.

* We could wish our correspondent had not forgot to mention the colour which these skins assume after they are dressed; but from what follows we imagine it to be red. T.

Museum Rusticum, &c.

For M A Y, 1764.

VOLUME the SECOND.

NUMBER LV.

*A Letter to the Editors, recommending Nettles as a Substitute
for Hemp and Flax, in various Manufactures.*

GENTLEMEN,

I Have often heard it said that very good cloth, cordage, sails, &c. might be made of the fibres of the nettle plant; the trial of which I would earnestly recommend to some of your country readers, who have an opportunity of doing it.

If I mistake not, it has been tried with success, either in Germany or Flanders; I do not exactly remember which: and I imagine the manner of preparing it cannot greatly differ from the methods of preparing hemp and flax after they are gathered *.

Using

* This has been more than once mentioned in our work already: we hope its being repeated may have some effect, and that a premium may be offered to encourage such as are willing to try the experiment. T.

VOL. II. N^o. 9.

Y

Using nettles, in this intention, may be new to us: yet, in the northern parts of Russia, there are whole nations which use no other hemp; and it is said to make the best of twine there for fishing-nets, bearing being wet and dry rather better than the ordinary hemp; and we may reasonably suppose, it is not, by these people, managed so properly as it might.

I could wish to see a premium offered by the noble society of which you are members, for the encouragement of this new manufacture, which might in time be greatly varied, and perhaps extended to finer and more costly commodities than we can yet well have any idea of. I do not despair of its vying, one time or other, with fine flax, for fabricating cambrics; being almost certain, from the few observations I have made on its nature, that its fibres may be made, at least, as fine; and, if I mistake not, they are stronger, and will bear the air better, and must, of course, last longer when manufactured into linen.

I shall be glad to see this appear in your collection, as it may be of use. I am an old man, and am willing to do some service to my country, during the small time of my sojourning here on earth. At my next interval of health I may, perhaps, write to you again. I shall now conclude myself,

Your reader and admirer,

April 3, 1764.

SENEX.

NUMBER LVI.

A Letter to the Editors, respecting the Timothy Grass, &c.

GENTLEMEN,

I Read, with great pleasure, the piece in your work, marked Number XVIII. page 60, Volume the Second, which treated of the superior excellence of *Timothy grass*; a pasture which the fen country farmers, in particular, cannot but find great advantage in cultivating.

I must,

I must, however, beg leave to set your correspondent right in one particular.

He says, that the *Timothy grass* was brought into *North-Carolina* by Mr. *Timothy Hanson*, from *Virginia*: this seems to be a mistake, as I am informed by a friend of mine, who has been in the country, that Mr. *Hanson* brought the seeds of this grass to *Carolina* from *New-York*.

That it may be cultivated in *Virginia* I make no doubt, as from its great use it must certainly soon spread over almost the whole continent of *America*.

I am also informed by the same gentleman, that this grass is, to great advantage, cultivated in some parts of *Pennsylvania*, where they cut it green for feeding their cattle, in the same manner lucern is often used in *Europe*. It is so luxuriant as to yield them several crops in a summer, and the inhabitants reckon it very wholesome, sweet, nourishing food.

If the burnet grass, lately propagated and recommended by Mr. *Rocque*, should succeed in *England*, it would, I think, be highly proper to send some of the seed to *America*, where it might easily be dispersed by means of the society's corresponding members, who would, without doubt, gladly embrace such an opportunity of serving their country.

If once a communication of experimental knowledge in agriculture, betwixt our *American* colonies and the mother country, should take place, it would be of infinite use to both; for there are growing wild in *America* many plants, which would undoubtedly succeed well when cultivated in *England*.

A little public spirit would bring this matter about; but the misfortune is, that most people are so intent on serving themselves, that they take little heed about the public; promoting nothing but what will tend to their own immediate and particular emolument.

Was a spirit of emulation raised in the *American* planters, they would, doubtless, improve on the old methods of

practice much faster than they do; and this would not be wonderful, if we consider that all their time must, of course, be occupied, in what manner best to cultivate their lands; for on the produce of them do they chiefly depend for support; commerce having, as yet, scarcely extended beyond the sea-coasts.

I own I think it a great pity that the government does not annually offer premiums for encouraging agriculture in our colonies; a nation of good husbandmen can never be poor.

If our northern colonies should have more corn than is sufficient for their own consumption, and that of the *West-India* islands, they might not only find a ready market for it in the Spanish and Portuguese dominions in Europe, but could also afford to pay a moderate duty for the liberty of exporting it: whereas, here in *England*, the government gives a bounty to the merchant for contributing to enhance the price of bread to the consumer. I am,

GENTLEMEN,

Mile End,
April 4, 1764.

Your sincere well-wisher,
A FRIEND to the PUBLIC.

NUMBER LVII.

A Letter to the Editors, recommending the Breeding Mules in England, with Directions in the Choice of Asses and Mares, and the Management of the Colts till fit to break.

GENTLEMEN,

I Do not remember, in any of the letters written to you by your very ingenious correspondents, to have seen that useful animal the mule mentioned; an animal which, properly trained, will be of more service to the middling farmer, than even the generous horse, as his keeping is by far less expensive, he is longer lived, and liable to fewer accidents or distempers.

In

In Spain there is great encouragement for breeding and training mules to every kind of business: in Portugal they are estimated at a high price, and are not a little valued in the southern parts of France.

I own I have often been astonished (the useful nature of this creature considered) that we do not more encourage the breed in England. This inattention may, perhaps, proceed from mules being thought naturally more vicious than horses: I doubt the fact; yet, be it as it will, they are, to my knowledge, equally capable of being made useful, docile, and gentle.

I assert not this, gentlemen, merely from opinion, having had many years experience of what may be done in this way.

During the course of the war, in which his royal highness the duke of Cumberland commanded the army of the allies in Flanders, the empress-queen made him a present of above fifty fine mules to carry his baggage: these mules, at the end of that war, were brought to England, at which time I had an opportunity of seeing and admiring them. They were, I think, the finest and largest I ever before beheld; and one, nearly white, particularly attracted my attention, being almost sixteen hands high.

This circumstance, of seeing his highness's string of mules, it was first induced me to think of breeding them, in which I have since had uncommon success.

I had many encouragements to make the attempt: my fortune was such as could not be hurt by the experiment; my park was extensive, and very proper for the purpose; and I had many servants, who had so little to do, as to have leisure time enough to obey my orders in this matter.

My great difficulty at first setting out was to procure a he-ass or two to cover my mares; for I found none were to be got, of any size, bred in England.

It is true, I met with some Spanish asses; but they were sluggish, and not likely to get mettled colts: besides, I could not buy two of them, of any size and shape, under seven hundred pounds, which I thought too much money

to throw away, if I could by any other means get my end easily answered.

Sensible that perseverance does much in all things, I bought a strong-boned, fine-shaped he-ass, and two she-asses of a large size, considering they were bred in England, determined to try if I could not by a little care and attention mend the breed, before I attempted to get any mules.

These cost me only four pounds, and my two she-asses soon afterwards dropped a foal each.

I continued to breed from them for several years; but it is to the manner in which I managed the ass-colts, that the great success I have lately had in breeding mules must be ascribed.

I took care that the she-asses should be well fed, and be kept in order, both before they dropped their foals, and afterwards whilst they suckled.

As soon as the colts were weaned, I had them as carefully attended and fed as if they had been got by Childers, or Babram: every winter they stood under cover, defended from the injuries of the weather, and were regularly fed, cleaned, and littered, the door of the stable being always left open two or three hours in the middle of the day, for them to exercise themselves as they thought proper, which they seldom failed to do, if the weather was fine, to some purpose, returning, without compulsion, when the hour of feeding approached.

In this manner I always managed them till they were three years old, when I permitted my stone-colts to cover, and my females to breed.

You would indeed be surprised to see how much, by this plain and simple management, my breed of asses is improved; for I have now in my stables several he-asses, which I keep as stallions, that are, I believe, as large, and as well shaped, as any that were ever heretofore bred in these islands.

I shall now proceed to describe to you the manner in which I breed my mules. For this purpose I chuse mares

that are of a very large breed, such as are sometimes used to draw the brewers drays in London.

My next care is that they are young, full of life, large barrell'd, but small limbed, with a moderate-sized head, and a good forehead. At the proper season my mares are covered by my as-stallions, and they seldom miss. During the time the mares are in foal, I take care to have them fed with nourishing fodder, such as I imagine will most contribute to the size of the foal.

My expectations, after this management, are generally answered; for in due season my mares drop foals, which I could often sell for ten, and sometimes for twenty guineas a-piece at three months old; and their future value is more than in proportion encreased afterwards.

I always house my mule-colts the first winter; otherwise the hard frosts, and sharp, cold, long nights, would stint them in their growth, besides making them unshapely and rough.

From the time of their being dropped, I cause them often to be handled, to make them gentle: this prevents their hurting themselves by skittishness, and sudden frights: they are besides much easier broke at the proper age, and become docile and wonderfully harmless, having nothing of that viciousness which is so commonly complained of in these animals.

I have them for the most part broke at three years old, but never permit them to do much work till four: they are thus secure from being hurt by hard labour, till they have acquired strength enough to bear it without injury.

I have now several mules which I constantly employ in various kinds of labour; two, which are indeed very fine, I ride myself after my harriers; two more I keep for my huntsman, and one for my whipper-in: these are black, sorrel, and grey.

I have also four fine mules, but stronger and heavier than those above mentioned, which I drive occasionally in a four-wheel chaise, besides several others less valuable, used for plowing and carting.

Some

Some of my neighbours smile at my taste ; yet they cannot at the same time help acknowledging, that they are cheaper animals, when bred at home, as has been my practice, than horses.

Perhaps some of your readers, from the hints above thrown out, may be inclined to try the experiment : if so, I would caution them against some errors I at first setting out fell into.

I thought at first I could not keep my colts too well during the winter months : accordingly I ordered that they should have the sweetest hay, which I had before ordered to be reserved for my cows, and as many oats as they could eat.

This way of feeding them, it is true, made them very fat ; but it was far from being an advantage to them, for I afterwards found, by experience, that it was not only incurring a much larger expence than was any ways necessary, but also made them wonderfully nice and delicate in their appetites ever after, and also, by encreasing their weight of flesh, made them more subject to strains and hurts in their morning gambols.

Finding this to be the case, I altered my method entirely, and contented myself with giving them food enough to prevent their losing flesh, and keep up their growth, without palling their appetites with delicacies, or making them over fat : as to the rest, I took the same care of defending them from the injuries of the weather as ever, by allowing them stable room, and good litter to sleep on, besides causing them every day to be well rubbed down with a hard wisp of straw by an active groom, whose peculiar province it was to attend them ; and this was scarcely ever omitted, particularly in cold, raw, wet weather, when they were least inclined to exercise themselves in the park.

Fully sensible of my want of method, I ought doubtless to make an apology for the loose dress my thoughts appear in ; but this would be only adding to your trouble : such as they are, you are heartily welcome to them ; and I assure you it will give me great satisfaction to see that any
compo-

composition of mine could be thought worthy to appear in so useful, so truly valuable a work. I am,

Your constant reader,

April 5, 1764.

BARONETTUS ANGLIÆ.

NUMBER LVIII.

A Letter to the Editors, giving Reasons why the Practice of Denshiring, or Burnbaiting Land, is not more universally in Use. (See Number XII. page 45, of this Volume.)

GENTLEMEN,

IN one of your notes on my last letter, you object to my observation, that most probably denshiring will, in time, be the universal system; as it is not yet so, though the practice is not new.

I could give many reasons why (as yet) it is not so, but will only mention two.

First, The poverty of many small farmers, who, being at rack rent, dare not hazard so considerable an expence on lands they may leave before their money will come in again.

The other is, that landlords seeing the greediness of farmers, that they work the land out, that they think of no improvement beyond the present crop, are in general set against this practice, and deny leave to their tenants to follow it.

You have guessed rightly that I speak of Lincolnshire, but I fear are in the same opinion with *my friends the Monthly Reviewers*, that the road from Stamford to Grimsby is passable only for geese.

The soil near my house is light sandy land, with a considerable mixture of clay, in general not above a foot deep, and stone below it.

The soil adjoining to the heath, and which is a very considerable proportion of this county, is strong, cold,

and clayey, runs greatly to ant-hills, and much to furz: there is great variety, 'tis true; but it all inclines that way, though in different proportions.

The practice I recommend suits either of these soils extremely well; but in sowing the last crop with seeds, regard must be had to the sort of land: the former heath soil should be sown with saintfoin if for hay, trefoil and ray-grass if for pasture: the cold land should be sown with hay seeds, ray-grass, and trefoil mixt.

'Tis very common to sow two crops of turneps successively; nay, many farmers sow three; but this I do not approve.

The reason the first crop does not require hoeing, is not so much from the quantity of seed, as that the ground being only once plowed, none can grow but that which is drawn by the harrow into the hollow made between one furrow and another, where it raises a mold, and the burning the swarth destroys the weeds.

I said it *always* insures good crops, that is, the two or three first crops after the denshiring; and this is the well-known effect of it: but in land plowed without burning, the most approved method is to plow the swarth, between Candlemas and Lady-Day, according to the crop intended (we generally sow lentils on one plowing); then fallow it the summer, and manure it; then wheat, and so on in the common course of husbandry.

When farmers live far from great towns, manure is not to be had; denshiring provides it: mere plowing will, in good soils, bring good corn; but let the *drillers* (I was formerly one) say what they please, manure is certainly necessary for moderate land, for turneps absolutely so*.

I was a correspondent of Mr. Mills in his last book of husbandry, which drew from me many observations, that
otherwise

* We agree with our very sensible correspondent, that manure, even in the drill husbandry, must in general be of service to moderate land, and think Mr. Tull's greatest oversight was his excluding manure totally from his system. R.

otherwise might properly enough have appeared in your collection; and (if your other correspondents will set the example) I shall have no objection to subscribing my real name*; till then must remain,

GENTLEMEN,

Your very humble servant,

April 28, 1764.

RUSTICUS.

P. S. Lincolnshire in improvements is some forty years behind Norfolk.

NUMBER LIX.

A Letter from Mr. Smith to the Editors, on the Advantages to be derived from the Culture of Vetches.

GENTLEMEN,

IT would certainly be of great national advantage, could our stock of cattle and sheep be encreased without diminishing the quantity of our lands that are in tillage.

This can no otherways be done, but by encouraging the growth of artificial pastures, which the farmers have of late years fallen into.

The turnep husbandry is not of very old standing in this island, yet has it made a very rapid progress. The immense utility of it, when properly practised, cannot but be evident, even to an ignorant common farmer, on the slightest inspection. This evident utility of it has occa-

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sioned

* This gentleman's future favours will greatly oblige us; and if he will permit us to make use of his name, we shall be doubly indebted to him. We are the more earnest on this head, as several of our correspondents, men of rank, have expressed themselves in the same manner as *Rusticus* has done. Our chief reason for desiring the subscription of the real names of our correspondents is, that they would, with many, greatly enforce the precepts contained in the letters, and be considered as an additional mark of sterling value. R.

sioned its being almost universally practised in the counties of Norfolk, Suffolk, and Essex, whence it has spread to other parts of England, and is of late even adopted in Ireland, where, I am informed, the gentry are very intent on improving their estates.

The coleseed plant has also its utility, and in many places is as universally sown as the turnep. I have, myself, very often raised this crop, as well for feeding sheep, &c. as for the sake of its seed, and have had no little success in this husbandry, being very fond of it, as coleseed is an excellent crop to overpower, choak, and destroy weeds.

Now I have mentioned coleseed, I cannot but acknowledge my obligations to a correspondent of your work, who signs himself I. I. and dates his letter from the Middle Level. I am obliged to him, I say, for the excellent account he has given of the culture and management of this plant, as practised in the fen-countries.

Many farmers, who hold land of a fenny or moory nature, will, by the help of his directions, be encouraged and enabled to attempt this husbandry to their great emolument; a husbandry to which they were before utter strangers, for though they might know the upland practices, this could be but of little use to them.

Your correspondent above mentioned writes like a man of sense and experience, and I hope we shall see many more of his letters in your very useful collection.

I wish the burnet grass, so strongly recommended in several parts of your work, may answer every purpose that is expected from it: it seems to promise very fair from the accounts given of it by Mr. Rocque; and if it has not too much prejudice to encounter withal, it may probably succeed, and the culture of it become as universally adopted, as is that of the turnep, or coleseed plant, already mentioned.

So much in general; but the particular reason of my now writing to you, was to recommend to the industrious farmer the cultivation of vetches as food for cattle.

I have often sown this crop with great success, to prepare my land for wheat, and have always found that by growing to a large cover they destroy and choak up a great number of weeds, which would otherwise do me immense damage: indeed, I think them, for this purpose, next in rank to a hoeing crop.

When I sow vetches before wheat, I always, in the spending my crop, have regard to the condition of my land. If my land is not in good heart, but wants mending, I not unfrequently fold my sheep on it, and feed off my crop in the field; but if it is inclined to be rank, or the wheat which is sowed on it, is apt to run much to straw, I often cut my vetches green, and feed my horses in the stable with them. I find no food agree better with them; they thrive well, grow fat, and are always in good health and spirits when thus fed.

I sometimes also mow my vetches when they are in bloom, and make them into hay, in the same manner I manage my clover and meadow grass; all which I leave in grass cocks in the field, whilst it is haying, very seldom spreading it, for fear of rain; and after two or three turns it is generally fit to carry.

The great art, in making hay of vetches, is to contrive in such sort, that the leaves do not drop off the plants, which, if left too long, or dried too suddenly, they are apt to do; and the farmer is to understand, that great part of the peculiarly nourishing quality of the hay resides in the leaf.

I say peculiarly nourishing, because almost every kind of cattle, as horses, oxen, cows, and sheep, is fond of it, and they all thrive on this food amazingly: this I have often experienced, and moreover observed, that they make no waste even of the stalks, which they eat with an appetite.

In this manner I manage for my hay, when I am inclined to have it very fine and fit for my cows and sheep; and in this manner it is no very difficult matter to get it in in good order, sweet and wholesome: but when I intend it only for my horses, I generally let my crop stand something

thing longer ; that is, till the kid, or pod, is formed, and the seed about half grown within it.

When the hay is made in this last way, the business is much more ticklish, and constant observations must be made to see when the crop is in proper order to cut, because if it is left too long, the stalks grow hard and sticky, and the leaves are apt to drop off.

This hay is more nourishing, when cut in this last method, than I can well describe : it answers both for hay and corn ; and with this food my horses will be in good flesh, health, and spirit, and be able to do a great deal of work. I have often proved this to be true, can therefore the better venture to assert it.

I have still another method of making these vetches into hay, which is to leave the crop, till the seed is grown to its full size in the pod, though not ripe : I then mow them, and, when dry, thresh them on a cloth in the field ; by which means I procure a considerable quantity of pigeons meat, which fetches me a tolerable good price ; and this pigeons meat sells better at market, than if the vetches had stood till the seed was thoroughly ripe ; for by cutting the crop when the seeds are barely full grown before they begin to harden, they shrink in the drying, and thereby become of a smaller size than they are by nature, and consequently more proper food for pigeons than if they were larger.

I own, the hay in this last method is not quite so good, as many of the leaves will, in spite of all the care that can be taken, drop off, and the stalks will be a little sticky : yet, after all, it serves very well for my ordinary cattle, and even for my plow and cart horses with the assistance of a few oats.

Vetches are a very good plant to sow thick on land, and when they have formed a perfect cover, to plow them in, in order to the land's being sown afterwards with wheat on one plowing. In this intention they answer to the full as well as buck-wheat, or clover.

When a farmer intends to plow in his vetches, I would by all means advise him to do it some weeks before he sows

sows his wheat, that they may have time to ferment and rot, or the consequences may be fatal to his crop: I once, myself, lost the chief part of a fine field of wheat by this oversight.

I should be glad to see some of your very ingenious correspondents enlarge more than they have yet done on the subject of manures, the nature of the several kinds being very little understood by common farmers; yet is there nothing more dangerous than a misapplication of them; and to this misapplication of manures may we, in a great measure, ascribe the present slovenly method of husbandry practised in most counties, the failure of crops, and the abundant encrease of noxious weeds.

I am, GENTLEMEN,

Essex,

Your humble servant,

May 1, 1764.

J. SMITH.

NUMBER LX.

A Letter from Mr. Vesey, to the Editors, containing an excellent Remedy for the Scab in Sheep.

GENTLEMEN,

I Need not tell you, I presume, that the cause of *the scab* in sheep is a tedious length of wet weather: as to the consequences, they are already pretty well known.

I imagine your readers will not be displeased if I should, with your assistance, communicate to them a remedy for this disorder, which I have several times tried, and almost always found to answer extremely well.

Some men, whom I have known to breed and feed a great number of sheep, have been grossly mistaken in their comprehension of the nature of this distemper, which they rashly judged to be merely cutaneous; whereas, when a sheep has *the scab*, the blood is always more or less affected by it: therefore the outward applications, which are in general alone resorted to for a cure, do for the most part
more

more hurt than good, by driving in the eruption, and making it fix on the internals, thereby often occasioning the death of the animal.

Now the true way to treat this disorder is, first to give the animal something inwardly to drive out the eruption; then comes, with propriety, the outward application, which completes the cure by killing the scab.

When a farmer has any of his flock afflicted with the scab, let him attend to the directions which follow.

Take a gallon of soft well or pond water, which divide into two equal parts: in one of these parts dissolve eight ounces of old hard soap; to which, when it is dissolved, add two ounces of spirits of hartshorn and seven ounces of common salt, with four ounces of roll brimstone, beat to a fine powder and sifted: then take the other part of the water, in which put two ounces of tobacco leaf, and one of white hellebore root: boil this second part till you have a strong infusion, after which strain it clear from the leaves and roots.

When you have got thus far in the process, take that part of the water, first mentioned, and set it over the fire; let it boil for about half an hour, keeping it continually stirring with a wooden ladle during that time: in the mean time heat again the other part, in which the tobacco and hellebore were infused; and when it is hot, mix the two parts gradually together over the fire, keeping the mixture continually stirring till it is taken off the fire, which should be in about a quarter of an hour: when it is quite cold, let it be put into a stone bottle, in order to its being kept in a cool place for use.

Then take four quarts of new ale or beer: put into it twelve ounces of common salt, two ounces of bay salt, and eight ounces of pounded nitre, together with twelve ounces of pounded roll brimstone: set them over a gentle fire, and when the ale boils, take off the scum; let it boil for about half an hour; after which set it by till it is cold, and put it into a stone bottle for use.

When

When you are so far prepared, take one quart of ale ; set it on the fire ; mix into it, by degrees, three ounces of flour of brimstone ; when it is just ready to boil, take it off the fire, and let it stand to cool ; and when it is only blood-warm, give this quantity inwardly to three sheep, which is to be repeated every second day, till they have had three doses. This will drive out the disorder, when the first mixture is to be rubbed on the distempered parts ; and two days afterwards, the second ; and so alternately for about eight or ten days, till the cure is effected : sometimes two rubbings will be sufficient.

I must observe, that all these mixtures will be best boiled in well-glazed earthen or iron pots.

I have been encouraged to send you this remedy, from a very sensible letter I read in your last publication, signed *Ruricola Gloucestris, L.* I wish that gentleman would oblige the public with his name.

I am, GENTLEMEN,

Marlborough,
May 5, 1764.

Your humble servant,

I. VESEY.

NUMBER LXI.

A Letter to the Editors, respecting the mean Weight of any given Measure of Wheat for several successive Years, &c.

GENTLEMEN,

AS the *Museum Rusticum* has entertained the public with many curious observations, and brought to light many *arcana*, which otherwise might have been condemned to perpetual oblivion ; I venture to offer the following experiments to the inspection of the editors of that work, that, if they should be thought worthy of a place in it, they may, through that channel, be communicated to the public.

The motives which induced me to enter upon the subsequent task, were the many arts the farmers make use of

to enhance the price of corn, to the no small detriment of the community in general, and especially the poorer part of it: upon which consideration, I have often thought that it would be of great service to the public, if, by any method, there could be determined a mean weight for any given quantity of corn, and likewise what number of grains, upon an average, ought to be contained in each ear, and the proportional weight between the ear, with the grains in it, and when taken out, and likewise the proportional difference between the weight of the whole stalk, including the ear and the grain. And if these points could be settled with any tolerable degree of accuracy, we need pay no attention to what the farmer says, with regard to his crop not yielding well; to the straw being in too great a proportion to the grain; to the grains themselves being light, or the reverse, as it may suit his interest: for that very grain, which to the landlord is represented as light, and of little value, in order to depreciate the land, wears a quite different face in the sample which is exposed to sale; by which means those bounteous stores, which Providence intended for the public, are, from their dearth, cut off from those who stand most in need of them, to the advancement of a few, and the destruction of thousands.

But in order to settle this medium, under our present consideration, it will be absolutely necessary, in the first place, to make accurate and impartial experiments for a number of years, and then, by comparing the produce and the weight, &c. of the whole, both separately and together, we may come pretty near the mark in view.

In order therefore to pursue the plan I had laid down, in the beginning of the harvest of the year 1757, I got three ears of common red Lammas wheat out of — field, Aug. 26. I then cut off the stalk close to the ear, which I weighed with the corn in it: I then weighed the grains when rubbed out of the ear, and cleared from the chaff: in the next place I compared the difference, and then counted the number of grains in each ear respectively; and at the
end

end of every year set down the weight of a cubical inch of the produce of that harvest.

But in order to give a clearer idea of my method of proceeding, I will set down the weight, &c. of the corn which was gathered from the first field, in columns, in the manner I entered it in a book kept for that purpose, which will be sufficient to explain the whole without a multiplicity of figures.

Number of ears, when and where got.		Weight of the ear with the corn in it.			Weight of the grain when free from the chaff.			Difference.			No. of grains in each ear.
		3	Ɔ	gr.	3	Ɔ	gr.	3	Ɔ	gr.	
1757.											
Three ears got	1	0	1	5	0	0	19 5	0	0	5 5	28
in ——— field,	2	0	1	2	0	0	17 5	0	0	4 5	27
August 26.	3	0	1	7	0	1	1	0	0	6	36
Total.		1	0	14	0	2	18	0	0	16	91

I proceeded in the same method with each of the three ears taken out of fourteen other different fields, during the time of the same harvest: then casting up the sum total of each column, and dividing their products by the number of ears gathered that season, the quotient would give me the mean weight, &c. of an ear of that harvest, and its number of grains, &c. &c.

I then made a cubical vessel containing exactly a square inch; and having mixed all the corn together, I filled the above vessel, and weighed its contents with the greatest accuracy; which weight I set down, repeating the operation seven or eight times, having well mixed the little heap of corn together, after each trial, and then set down the weight of each as before: and as there would sometimes be the difference of a grain or two more or less in each cubical inch, I divided the product of the whole by the number of times the experiment was made, and set down the quotient as the mean weight of a cubical inch of corn for that year, which in 1757 I found to be 3 dr. 12.3 gr. I have persevered in this method

every year since : but to avoid troubling you with the particulars of each, I will give you at one view the mean weight, &c. the number of grains in a ear, and the weight of a cubical inch for each of these last seven years past, and after that the medium of all taken together.

I made use of apothecaries weights upon account of the smaller subdivisions of the ounce into drachms, scruples, and grains, which I have afterwards, in reckoning up the weight of the bushel, reduced to troy, and averdupois. But we will now give the result of the seven years experiments in the following columns.

A. D.	Mean weight of each ear with the corn in it.	Mean wt. of the grains alone.	Difference.	Mean No. of grains.	Mean weight of a cubical inch.
	3 ℥ gr.	3 ℥ gr.	3 ℥ gr.		3 ℥ gr.
1757	0 1 10 5	0 1 5	0 0 5 5	38	3 0 12 3
1758	0 1 5	0 1 0 5	0 0 4 5	30 4	3 0 13 3
1759	0 1 8 2	0 1 2 4	0 0 5 8	37 6	3 0 14 5
1760	0 1 14	0 1 4 4	0 0 9 6	36 8	3 1 4 3
1761	0 1 9 5	0 1 4 5	0 0 5	36 6	3 1 4 3
1762	0 1 17 4	0 1 8 3	0 0 9 1	36 5	3 0 16 5
1763	0 1 10 1	0 1 3 3	0 0 6 8	35 5	3 0 17
Total.	3 1 14 7	2 2 8 4	0 2 6 4	251 4	23 0 2 2
Mean wt.	0 1 10 67	0 1 4 05	0 0 6 62	35 9	3 0 17 457
The total divided by seven gives the mean weight, &c. &c. of the whole together, as in the preceding line.					

The first of the above columns (the date of the year not being reckoned) shews us, at one view, what we may expect a single ear of Lammas wheat, separated from the stalk, to weigh upon an average ; and the second what its produce in grain should weigh when separated from the chaff: the next division gives the difference, being the weight of the ear and chaff alone without the grain ; the fourth, the number of grains in each ear ; and the last, the weight of a cubical inch ; which latter we shall further consider, and see what will be the mean weight of a bushel, omitting the odd grains and decimal parts, as immaterial in so large a measure.

As the standard Winchester bushel contains 2150.4 cubical inches, if the above weight of one, *viz.* 33 17.457 gr. be multiplied by that sum, the product will be 73 lb. 8 oz. 12 dwt. troy. But this standard bushel is in fact too small, the real contents of a bushel dry measure being 2178 cubical inches, which, according to that calculation, will give 74 lb. 7 oz. 19 dwt. which sums reduced to averdupois weight will stand as follows.

	lb. oz. dwt.		lb. oz. dr.	
Troy	{ 73 8 12 }	equal to	{ 60 10 8 6 }	avardupois.
	{ 74 7 19 }		{ 61 6 15 9 }	

But it will be proper to take notice that none of this corn was weighed till thoroughly dry, and seldom till the harvest after it was got, and sometimes later; therefore there must be some allowance made for the loss of weight by keeping; which I found upon trial to be about four grains yearly in a cubical inch, and considerably more the first year, especially if the corn happened to be got in a wet harvest: therefore I think we may fairly estimate the mean weight of a bushel of wheat, containing 2178 inches, to be about 62 lb. averdupoise weight.

I know that a bushel of good wheat is, by the generality of writers upon agriculture, calculated at about 64 lb.; but our present enquiry is not whether it is good or bad, light or heavy of its kind; but what is the medium betwixt the two extremes, in order the better to judge of its qualities, according as it falls short of, or exceeds, that determined weight.

The fields out of which the corn was gathered for the above experiments, are mostly situated within a circle of ten or twelve miles round the town of Warwick, and some of them in Northamptonshire; and in soils of different kinds, and such as have been productive of good, bad, and indifferent crops.

With regard to the observations, which I now offer to the public, they may be assured that they have been made with

with the greatest accuracy, and, barring any errors in the calculations, without the least deviation from the truth.

My method of gathering the ears of corn was, to crop them standing during the time of harvest, always endeavouring, as near as I could guess, to take such as were of a middling growth, avoiding the fullest ears, as well as those which were shrivelled, or stunted. I therefore generally got them from about the middle space between the ridge and the furrow; I then carefully wrapt up the produce of each field in separate papers, to prevent the corn from shedding, or intermixing.

The column which shews the difference between the weight of the ear with the corn in it, and that of the grains alone, is meant only as relative to the ear itself, without the stalk added to it, which latter was always separated from it. But I have since made some few experiments with regard to the proportional weight between the whole stalk and ear, and its produce in grain; and I found the former to be to the latter as about 67 to 72. But I cannot depend so much upon the justness of this calculation, as of the others, it being only tried upon the produce of one harvest.

It must be observed that the weight of corn will vary more or less by keeping, according to the nature of the grain itself, the seasons that it has had for its growth and maturity, and the dryness or moisture of it when reaped: for notwithstanding, as was before observed, that there may be an annual loss of about four grains in every cubical inch upon an average, yet it may so happen that the weight of it may even be increased by keeping, as was really the case with regard to the corn which was got in the harvest of the year 1762, after an excessive dry summer; for I found, upon weighing a cubical inch of the same corn, a year after the first trial, that it had actually increased in weight 2.6 grains, which I can by no means account for, but upon a supposition that the corn contained in the ear, having been so thoroughly dried, whilst standing, by the preceding heats and great
drought,

drought, there was no room for any further evaporation of aqueous particles; but that, on the contrary, being laid up in this extreme state of dryness, it must even imbibe moisture afterwards, from the coolness of the place where it was repositied; by which means the grain would become more plump than when fresh gathered, and would consequently encrease in weight. From hence the reason is very obvious, why corn that is thoroughly ripe, and well ended, will undergo a much less change by keeping, than that which has been plumped up by preceding rains, though perhaps it may look better to the eye than the other. But I think it may be laid down as a rule, that the more the external coat of the grain is extended by redundant moisture from within, the more will it appear shrivelled and wrinkled, whenever that moisture is evaporated, which it must lose upon being kept for any considerable time in a dry place: therefore it will be most to the advantage of the owner to have such corn spent as soon as it is sufficiently dry for common use, and not to hoard it too long in the granary, as the heap from the above-mentioned cause will be daily decreasing.

If further experiments of this kind were to be tried in other parts of this kingdom, and even in different climates; and if the result of each observation was to be compared with the others, we might probably come still nearer to the medium which we have been aiming at; and the same trials might be made with any other sort of grain*.

But I shall dwell no longer upon this subject, having already exceeded the bounds of my intended epistle: I shall therefore add nothing more than that

I am, GENTLEMEN,

Your constant reader,

May 1, 1764.

And humble servant,

WARWICENSIS.

* We are greatly obliged to the gentleman who has favoured us with this letter, and shall always set a proper value on such pieces as he shall in future communicate to us, having no doubt from this specimen, but they will be useful, entertaining, and accurate. E.

N U M-

NUMBER LXII.

A Letter to the Editors, from Mr. Stephen Mills, Surveyor of the Road from Northampton to Harborough, sent with some excellent Directions for making or mending Roads in general.

GENTLEMEN,

AS I find you receive the thoughts and plans of many persons, I take the liberty to send you one on the making roads. It is what I myself have practised for above thirty years; for I am, gentlemen, surveyor of the roads from Northampton to Harborough; a road reckoned the best amended of almost any in the island; and as it has got a great reputation, it has been the cause of my being called in, by the trustees of other roads, to overlook and direct their surveyors; and having found the directions, in the following piece, the best I have ever heard of, or met with, I judge they may be of great use to the public, for whose benefit I communicate them.

I am, &c.

Pisford, April 24, 1764.

STEPHEN MILLS.

An Account of the Method used in repairing that Part of the Leicestershire Turnpike Road, from Kibworth Harcote, to Great Bowden Field; being betwixt Seven and Eight Thousand Yards, and performed in Ten Weeks and odd Days; and also, wherein that Method probably may, or may not, be pursued in repairing the Road from Harborough Bridge to Pisford Bridge, in the County of Northampton; with some useful Observations about repairing of Roads in general, particularly the last mentioned, &c.

Account of the LEICESTER ROADS in general.

THE act for repairing the road from Market Harborough to Loughborough, in the county of Leicester, commenced

menced the first day of May, 1726, and was to continue in force for one and twenty years, unless the road should be sooner repaired, and all charges defrayed.

The trustees immediately set about it, and erected four turnpikes, the better to secure the tolls, or duties, appointed by the said act to be taken: the road to be repaired being of so great a length as twenty computed miles, and an open country all the way, it was adjudged fewer gates would be of little service, although so many would very much enhance the expence, as well in looking after, as in building.

Mr. *Tillman Bobart* and Mr. *William Webb* were also treated with about the manner and expence of repairing the road, of which they gave in a scheme, according to which the trustees agreed with them for about one thousand five hundred yards, by way of specimen for the rest of the road.

But their method being very expensive, and not at all answering expectation for goodness, occasioned either by their haste and slighting the work, to get the better earnings by it, or by using bad materials, going on farther with them was laid aside: so I shall say nothing of their particular way of doing it, nor of the cost; neither shall I take notice of the manner or cost of repairing the road from *Bobart's* performance to *Glen*, (under the management of Mr. *Thomas Batchler*, general surveyor of the said road) by reason the method is said to be much improved in the road repaired from *Great Glen* to *Great Bowden liberty*; the road better, and more easy for carriage and travellers; and the charge not exceeding two thirds of that from *Leicester* to *Great Glen*.

In April, 1735, we began to move forward from *Glen* towards *Kibworth*; and *Batchler*, the surveyor above named, was ordered to get proposals for repairing the road from *Glen* to the liberty of *Burton*, which he did at one shilling and two-pence *per* yard forward, for preparing the road for gravelling, which was thought to be very cheap, we

having paid half a crown a yard ; and, by degrees, it dropt to one shilling and six-pence for the said work.

And for the carriage of the gravel heaped for one shilling and six-pence *per* load, which was thought reasonable enough : yet together the amount of five load of gravel to each yard forward, and one shilling and two-pence *per* yard throwing up the ground, came to eight shillings and eight pence for every yard forward.

The length of that part of the road contracted for was only nine hundred yards, of which the undertakers made a shift, in that summer, to do two hundred yards, and made such sad work of it, that it was done over again, in the year 1736, along with the rest of the road betwixt *Glen* and *Kibworth*.

Mr. *Batchler* dying in the interim, Mr. *Carnal* was elected surveyor in his stead, and myself was elected treasurer, under a promise, that I would assist the surveyor with my advice whenever he wanted it, and preside over all undertakings and matters relating to the road.

The surveyor has given me a constant, and, I may say, a daily account of his proceedings, and consulted me what was proper next to be done ; and, if any difficulty arose, if there was not time to lay it before the trustees, I made use of the discretionary power lodged in me by the trustees, and determined the matter ; without which it had been morally impossible to have made any tolerable dispatch in that great undertaking and performance the last spring ; for there will arise disputes and different opinions amongst the head workmen, so as to oppose the surveyor himself ; and the same obstructions of the work, in many other cases, are frequently happening, in which, if we had waited for the determination of a board of trustees, the season might have been lost : for though our act says the trustees shall meet on the first Monday in every month, and so much sooner or oftener as they shall think proper to adjourn to, I never could get five trustees to meet in four months time from the beginning of the summer's work.

Having

Having shewed above the cost of the nine hundred yards, as agreed for in *Glen liberty*, viz. eight shillings and eight pence *per* yard forward, and but two hundred * yards of that contract performed.

Onwards I shall give you an account of the repairing the road from the field or liberty of *Great Glen* to *Kibworth Harcote*, and so on to the middle of *Bowden Magna field*; the method being the same all the way, though there be several prices for carriage, which I shall hint of somewhere, and then reduce to an average.

I agreed with two sets of workmen for throwing up the ground, and preparing the road for gravelling; with one set, from *Kibworth* to the liberty of *Smeeton*, being three thousand yards; and with the other set, from the liberty of *Smeeton* to the *Red-House* called *Coleharbour*, and so much farther onwards towards *Harborough* as the trustees should require, which happened to be one thousand and one hundred yards more, the agreements being the same: underwritten I give you a copy of one of them, viz.

We A. B. C. D. &c. do hereby offer and propose to the trustees appointed to put in execution the act of parliament for repairing the road from *Market Harborough* to *Loughborough*, in the county of *Leicester*, in case the said trustees think fit to declare their acceptance thereof, by entering the same in their book of acts and orders, relating to the turnpike-road, to wit, to throw up, prepare, and make ready for gravelling, with proper outlets, drains, ditches, slopes, butments, mounds, elevations, and descensions, as shall be proposed and directed by the said trustees, their agents, or surveyors, the three thousand
yards

* The seven hundred yards, the remaining part of the nine hundred yards, was well done in the year 1736, at the cost of four shillings and six-pence *per* yard forward, by means of freeing a gravel-pit, nearer to the said road, of water that obstructed the getting of gravel there when attempted before, and getting the carriage of the gravel on more reasonable conditions.

yards of the turnpike-road (be the same more or less) that lies from the liberty of *Smeeton* to *Coleharbour*, and so much further onwards of the said road towards *Harborough*, as the said trustees, by their agents or surveyors, shall require or direct, at the price or rate of eight pence *per* yard forward; the surface of the said road to be twenty one feet diameter, within the mounds, at the least; to be paid weekly or monthly for what is finished to the approbation of the said agents or surveyors.

Witness our hands, the 31st day of January, 1736,

A. B.

C. D. &c.

Explanation of the Terms used in the Proposal.

Outlets are little sorts of channels, that run across the gravel roads, to receive the water that descends from the mounts or higher parts, and carry it into the ditches of each side the road.

By *ditches*, and *slopes*, and *drains*, are meant, that on each side the road shall be a sufficient ditch, and that the sides of the said ditches shall be cut sloping, like the letter V, four or five times as wide at the top as at the bottom, a foot wide there being enough; and that the bottom of the said ditches be made with a drain, or current, to convey the water away.

By *butments* are meant the margins or edges on the sides of the road, to prevent the gravel falling into the ditches when carriages go too near the outsides of the road; which butments or margins ought to be two feet thick at the bottom, and sloped off at the top six inches on each side.

Mounds or *mounts* are the crowns or highest part of each length you take to cover at a time, which varieth according as the ground naturally lies, or, by art, you make it: if your ground be a flat, thirty yards from your last outlet, or little channel above-named, is sufficient at one working, to the mount or head of the work: but if you take thirty-two yards up, and raise the ground one inch and a half in every yard up, and abate so much in each yard

yard down, for thirty-two yards to the next outlet, you will have a current of four feet.

The manner and method how to perform the work above mentioned with exactness, and yet as easy, and with the same dispatch as level work, will be shewed hereafter.

It may not be altogether useless to mention, how the throwing up the ground came to fall from one shilling and two-pence *per* yard forward (which, according to what had been formerly given, was thought very cheap) to eight-pence.

My first contract was from *Glen liberty* to *Kibworth*, at one shilling *per* yard forward, and to give us two years time to pay it in: this was grumbled at very much by the undertakers, though, at the same time, I thought it full wages enough, and privately kept an account, how many hands were employed, and for how many days; by which I found out so much of the secret, as to get the whole road, from *Kibworth* to *Great Bowden*, flung up, and made fit for gravelling, at eight-pence *per* yard forward.

And, at the same time, and by the way, I discovered another secret, which, while it remained so, was as profitable to the undertaker as the last article above named; which was the *baring the ground*, as they call it, and getting the gravel; for which we have paid three-pence, and two-pence half-penny, and never less than two-pence *per* load; which I found out might be done for a half-penny *per* load, or a very trifle more; and in seven or eight thousand yards, gravelled from *Kibworth* to *Bowden Magna*, which took up betwixt thirty and forty thousand loads of gravel, the getting of which did not stand us, directly nor indirectly, in a half-penny *per* load; by which article alone we saved, at least, two hundred pounds.

The carriage of the materials being the grand charge in repairing the roads, I shall here give you a copy of *one of the many agreements made for carriage*, viz. We, whose names are hereunto subscribed, inhabitants of *Kibworth Beaucampe*,

Beaucampe, in the county of *Leicester*, farmers, do hereby offer and propose to the trustees, for repairing the roads from *Market Harborough* to *Loughborough*, in the county of *Leicester*, if they think fit to declare their acceptance of the same, by entering it in their book of acts and orders, relating to the said road, viz. to bare the ground, to dig, load, and carry, (on notice from the said trustees, or their agents) so much gravel as they shall think proper to be laid on the one thousand eight hundred yards of ground, be the same more or less, thrown up and made fit for gravelling, in that part of the turnpike-road betwixt *Kingsthorpe bridge* and the brook that parts the liberties of the two *Kibworths*, at the price of one shilling per load; twenty strikes of good and sufficient gravel, to be approved of by the said trustees or their agents, to each and every load: the gravel to be taken from the gravel-pit near *Kibworth church*, or from the gravel-pit in *Bell Close*, belonging to lady *Pickering*, in the liberty of *West Langton*, as shall be adjudged nearest and best for the said service: and we further propose to bare the ground, to dig, load, and carry, so much gravel, from the pit near *Kibworth church*, as shall be required to cover the road from the bottom of *Church hill*, or the rill that there parts the liberties of the two *Kibworths*, to the house of Mr. *Hays* in *Upper Kibworth*, being, in length, betwixt five and six hundred yards, at the price of five-pence per load, twenty strikes to the load; provided one moiety of the amount of all the said carriage be paid to us respectively, according to our respective earnings, on finishing the said works; and the other moiety of the said amount (six days duty-work for one team, at six shillings per day, being first deducted from each subscriber) to be paid to us respectively in two equal payments: the first payment to be made on or before the 29th day of September, 1740, and the second payment to be made on or before the 29th day of September, 1741.—Witness our hands, &c.

Signed, *Robert Hames*, three teams,
 James Mitchell, sen., one team,
 David

N. B. *Bell Close* was one thousand two hundred yards to the nearest part of the one thousand eight hundred yards, and *Kibworth* pit was one thousand seven hundred yards from the nearest part of the one thousand eight hundred yards that way.

David Cooper, three teams,
Edward Pywell, three teams,
John Copley, one team,
John Wallis, two teams,
William Chapman, one team,
John Smeeton, two teams,
William Smeeton, two teams,
Widow Goodarle, two teams,
James Mitchell, jun. one team,
John Goodman, one team,
John Foxton, two teams.

The way by which we ascertained the number of strikes, was, by measuring of twenty strikes into each cart at its coming to the gravel-pit; and nailing of flats, old hoops, or laths, on the two sides and fore end of the cart, the height the twenty strikes filled it; and having a breech-board behind, to prevent loss in carting of it; or by running a little groove round, or by cutting a notch with a knife.

The way we made use of to prevent mistakes in the number of loads by each person carried: we appointed a clerk at every pit we made use of; who, in a paper or pocket book, kept a daily account of the gravel carried from the pit, after this manner, viz.

Gravel carried from *Bell-Close* pit to the one thousand eight hundred yards in *Nether Kibworth* liberty.

Mr. Robert Hames,	+	+	+	+	+
James Mitchell, jun.	+	+	+	+	
David Cooper,	+	+	+	+	+
Edward Pywell,	+	+	+	+	
John Copley,	+	+	+		
John Wallis,	+	+	+	+	+
William Chapman,	+	+	+		
John Smeeton,		+	+		
William Smeeton,		+	+	+	
Widow Goodarle,				+	
James Mitchell, jun.			+	+	
John Goodman,				+	
John Foxton,			+	+	

The 26th day of
 April, 1727.

All the contracts made for carriage were like that with *Kibworth Beaucampe* as to the general form, though differing in some particulars; as in some places they allowed but three days duty-work, at seven shillings *per* day, to be discounted; and in some again six days at seven shillings *per* day, and some six days at six shillings *per* day: some were paid all off in one year: some again were to be paid a third part in one year, a third part in two years, and a third part in three years, and had no money down: but the major part of our contracts run, half the money on finishing, and the other half in two payments, *viz.* on the 29th of September, 1740, and on the 29th of September, 1741, by reason we expected the income of our tolls would more easily pay them by those gradual payments: and to make the people easy, the trustees made an order, that so soon as the treasurer had adjusted and settled accounts for the said carriage, he should give each creditor for carriage, &c. a note, how much was due from the trustees to him, expressing the time, or times, when payable; which notes, or bills, if the proprietors pleased, might be assigned, or turned over, in the presence of the treasurer, to any person the proprietor thought fit, and an entry made of such transfer in the treasurer's book; and the money to be accordingly paid by the treasurer for the time being.

The Quantity of Gravel used on our Road the two last Springs, and the Prices of the Carriage and Distances from the Pits, to the nearest Part of the Road to be covered; and then add Half the Length of that Part to be covered, which makes the true Length carried.

No. of loads.	No. of yards carried.	Prices carried at <i>per</i> load.		The amount.		
		s.	d.	l.	s.	d.
800	300	—	3	10	—	—
500	400	—	4	8	6	8
1908	500	—	5	39	15	—
3200	900	—	7	93	6	8
1666	1000	—	8	55	—	—

No. of loads.	No of yards carried.	Prices carried at		The amount:		
		<i>per load.</i>		<i>l.</i>	<i>s.</i>	<i>d.</i>
5021	1100	—	: 8	188	: 9	: 4
1650	1150	—	: 9	61	: 17	: 6
3500	900 (and dug)	—	: 8	116	: 13	: 4
5415	1300	—	: 10	225	: 13	: 10
16513	1800	1	: —	825	: 13	: —
4124	2100	1	: 3	257	: 15	: —
1232	2300	1	: 6	92	: 8	: —
5590	2700	1	: 8	465	: 17	: —

51119 loads paid, or to be paid, for at 2440 : 15 : 4
 which, on an average, is nine pounds in the whole
 less than eleven pence half-penny *per load*.

2500 loads were carried by duty-work, done in kind, on
 ——— other parts of the turnpike-road.

53619 loads, in three months of 1736, and in three
 months of 1737.

The Produce of our Toll-Gates was,

	<i>l.</i>	<i>s.</i>	<i>d.</i>
For the year ending the 2d of May, 1735,	719	: 13	: 11
For the year ending the 2d of May, 1736,	781	: 18	: 5
For the year ending the 2d of May, 1737,	766	: 6	: 3
Total	2267	: 18	: 7

We have two hundred and eighty teams, obliged by our
 act, for repairing our road, to do three days duty-work on
 the turnpike-road, and above one thousand eight hundred
 inhabitants equally obliged to do the same duty-work;
 which, till of very late years, was of very small account;
 some towns not being called out at all, in the first nine years
 of our act, to do duty-work or repair: and other towns
 were permitted to do as they pleased, and made a mere jest
 of it; but since it has been brought into order and method,
 it is of very great service, and worth near three hundred pounds
per annum, towards repairing the roads, or mending those
 already repaired, that frequently want it. This year, by

reason of double duty freely offered, to encourage our mending the roads, it was worth a great deal more than I have mentioned above.

I shall now give a sketch of the management of the said duty-work, and then go wholly on the subject of the Northampton road.

B I R S T A L L.

<i>Teams.</i>	1737.	1738.	1739.	1740.	1741.	1742.
Nathaniel Alsop	- - -					
John Hallum	- - -					
Thomas Tuffley	- - -					
John Taylor, &c.	- - -					
<i>Labourers.</i>						
Hugh Hill	- - -					
William White	- - -					
Gabriel Sheppard	- - -					
John Brown, &c.	- - -					

Above I have given a method of keeping a book, with accounts of the duty-work performed, or, by our act of parliament, to be annually performed; and in order to make that more easy to our surveyor, we give him three sorts of precepts, to send to each surveyor of the respective parishes, through which our turnpike-road doth go.

One,

A Plan of the Road from Northampton to Harborough, with an upright Section, shewing the Hills and Valleys on that Road



Profile
100 feet higher.
at the River Nine
than at the Welland

One, to require a list of the inhabitants of each parish, which is sent as soon as the surveyors of the roads in each parish are chosen, of which we kept a register as above. And when the time of duty-work comes on, viz. from *St. Mark* to *Midsummer*, and after harvest to *St. Luke*, the other precepts are sent to the parish surveyors as occasion requires.

The usual way has been, on a Sunday, after evening sermon, for the clerk to give notice, that such and such days the inhabitants were to appear to do common work, or statute work, on the road: to prevent that, and make the duty-work as serviceable as possible, we take no more of them out at once than can be regularly managed.

NORTHAMPTON TURNPIKE-ROAD,

From *Harborough Bridge* to *Lampport Town's-end*,

Measureth eight miles, and five furlongs, or	15180 yards.
Suppose one mile and five furlongs, or	— 2860 yards,
be taken off, as needing small or no repairs,	—————
There will remain	12320 yards.

Which at three shillings and six-pence a yard, the least it can be laid at, will amount to the sum of two thousand one hundred and fifty-six pounds.

The above computation is made, as supposing it was to be done at the prices so much work and materials would stand us in here, in *Leicestershire*.

But for some reasons I shall hereafter give, I am afraid you cannot do it under four shillings and six-pence a yard forward, which will enhance the expence six hundred and sixteen pounds. But I shall endeavour to lay down some methods, which, if pursued, may probably ease you of the greatest part of the last sum mentioned.

The decay of your road I take to be chiefly owing to, or occasioned by, first, its flatness, and in many places being lower than the ground on either side of the road; so that having no current to carry off the water that falls from the

heavens, nor any ditches to prevent the water coming from each side upon it, the water lodges in the road, and sinking in, loosens the stones; and heavy carriages pressing against them, displace and turn them up.

Another reason of their being so very bad is, the want of some hands upon the road, constantly to have attended them, and replace the stones that should happen to be turned up, and help the water out of the ruts with scoops or skip-pits: four men in winter, and two in summer, might have made your roads continue as good as at first, much longer, especially with bestowing here and there a load of stones, where wanted, in time.

Though these neglects cannot be now redeemed, I mention them, because, let the road be ever so well repaired, they will be wearing, and consequently wanting some small matters to be done to them, which, if neglected, often proves of ill consequence to the roads.

Another occasion of your roads being so much worn out, is their narrowness; but one passage for carriages must of necessity wear out much sooner than a double passage, or road: besides, the single road deprives you of one of the greatest advantages in making a road good, and keeping it so when made; and that is, a ditch on each side, to dry the road, and carry off the water.

The Method proposed for amending the Road from HARBOUR-ROUGH to LAMPORT, viz.

To make the road, where it is now but eight foot wide, full twenty foot wide, where-ever it will bear it. And this is to be done by adding six foot on each side of the eight-foot road that now is; and where the road is now so near a ditch, on either side of it, as not to allow six foot, or part thereof, to be added to your now road, then take the twelve foot, or what is wanted, on the other side that will allow it: and in such case to take up three or four foot of the stone work that is so near the ditch above named, and lay that on the opposite side of your now road, which will keep your stony road still eight foot broad; and as near as can
be

be continued to the middle of the twenty-foot road intended to be made; not only because it will then take less gravel or stone to raise it in the middle, but because it will make it more solid and strong; for notwithstanding the road may then be called a double road, we find the carriages keep to the centre or middle of the road, unless obliged to go on either side, to make way when two carriages meet or pass each other; and because we cannot now raise any mounts, or elevations, at proper distances to give the water a current lengthways, that falls on the road.

It is proposed, to save that vast charge it must be to raise such mounts, and prevent the burying and loss of the stones to lay the road round, that is, much higher in the middle (where the wear will chiefly be) than on either side, and to throw the water to the edges of the road, and make outlets or cuts, at proper distances, for the water to fall through the butments, into the ditches on either side the road; and because in great rains the water on a flat road will stand, where the ruts are worn a little deepish, it will be the business of the men above (p. 194) spoken of, that attend the road, to draw a little passage for the water, with a spade or hoe, to drain the water to the sides of the road, that it may pass through the side outlets into the ditches on each side the road. We have no less than twelve of those men constantly employed in such like works, in our twenty miles; except that sometimes in summer we take them off, and otherways employ them; and in frost they stand idle, and have no pay from us.

I proceed to give account, at what rates I computed the cost of your road, in p. 193.

The gravel itself (unless lady *Pickering* insists on a small matter for damage done to some of her tenants in carting over their grounds) costs us nothing. As for the digging of the gravel, ever since I have been concerned, three parts in four of the vast quantity used on our road, the persons that carried it dug it themselves, or got somebody to dig it for them; we paid nothing more than what is under the name of carriage; and for the fourth part, that we were forced to
get

get ourselves, I cannot compute it stands us in above a half-penny a load getting out of pocket: indeed, we made use of some of our duty-men, and mixed them with our labourers that understood the work, and would hold them to it.

In my calculation in page 193. I reckoned that three loads of gravel, or stone, will at least be wanted to every yard forward, one part with another, of the twelve thousand three hundred and twenty yards of your road above named.

Now you are to pay four-pence *per* load getting of that gravel: it will be, at three loads to a yard, twelve thousand three hundred and twenty shillings, or six hundred and sixteen pounds, above my computation; and if it was to be done all with stone at six-pence a load getting, and six-pence ground, it would exceed my computation one thousand eight hundred and forty-eight pounds; the stone at *Brixworth* half the charge, nine hundred and twenty-four pounds; your carriage, at two shillings and six-pence, and four shillings and five shillings *per* load, on an average, comes to three shillings and ten-pence *per* load.

In my computation I charge the carriage, on an average, but at twelve-pence *per* load: the difference in three loads to a yard is above double the money I compute the whole cost to be: I shall therefore endeavour to support the calculation I have made, or at least within the six hundred and sixteen pounds doubted of in p. 193.

For example, from *Harborough* to *Oxendon* church, is two miles, one furlong, and nineteen perches: I drop the furlong and the nineteen perches at present, and call it two miles, or three thousand five hundred and twenty yards; and supposing a gravel-pit at *Bowden*, and that it will supply gravel to cover half the way to *Oxendon* church, being one thousand seven hundred and sixty yards; three loads to a yard, gives five thousand two hundred and eighty loads. Now it is only the three last loads that are carried a mile, and the three first loads nearest to *Bowden* but a yard on the road; therefore the gravel laid on that mile is but half a mile, or eight hundred and eighty yards, carried on an average, which in p. 188 we had carried at eight-pence the load the most.

It is exactly the same from *Oxendon* gravel-pit, to meet in the middle of the two miles betwixt *Oxendon* and *Bowden*; only from *Oxendon* pit there is a little more carriage before you get to the road; but that is made out to them that carry it, being great part of it down hill.

	<i>l.</i>	<i>s.</i>	<i>d.</i>
Now suppose one yard throwing up cost	0	0	6
And three loads of gravel cost one penny	}	0	0
<i>per</i> load getting — — —			
And three loads cost eight pence a load	}	0	2
carriage — — —			
			0
			2
			9

Which comes to two shillings and nine-pence a yard forward. But in many parts of the road, the gravel-pits are not so near together as these of *Bowden* and *Oxendon*, and will make the carriage come to more than it will betwixt the places last mentioned: and besides, some parts of the road will require three loads and a half, perhaps four loads, of gravel to a yard forward; which made me, in page 193, to compute the charge at three shillings and six-pence *per* yard forward; and I wish that may do: the people on your side having been used so generously, it will be a hard matter to bring them to common wages.

For men that have had four-pence *per* load for getting of gravel, to come down to one penny *per* load, which I think it may and will be done for, to the hire, in case you can have no duty-work done, to bring it yet cheaper, what your road, eight foot wide, cost *per* yard forward to prepare and make it ready to be covered with stone or gravel, does not appear to me; but I am morally certain, I can recommend some persons to you that will undertake to put the eight foot of your road, that now is, into good order, to be new covered with gravel, or chisselly stone, and add twelve foot more to the breadth of it, as in p.

194, (excepting only the elevations, which cannot now

be

be made, as might have been at first) at the rate of six-pence *per* yard forward, as I have charged it in p. 193.

As for stone, which in some parts of your road, where gravel is not to be had, unless at too great a distance for carriage, I think it may be got, instead of six-pence or three-pence *per* load getting, for one penny a load, and a great deal, as I shall shew by and by, for gathering up; but the price for the ground, of six-pence or three-pence *per* load for the stone got, is very extraordinary, and enough to make the repairing of the roads impracticable, and brings in so exorbitant a price for the value of land damaged, that gentlemen may wish their land was all of that sort.

There are few stone-pits that are less than nine foot deep, a yard square at top, and three yards long, but will produce at least three loads of stone, which, at six-pence *per* load, is one shilling and six-pence. One acre of land contains four thousand eight hundred and forty square yards, which, at eighteen-pence a yard, comes to three hundred and sixty-three pounds; and at three-pence *per* load, the least price named, to a hundred and eighty-one pounds ten shillings; and perhaps at the same time that land is not worth ten shillings *per* acre.

Now, if people are so ungenerous as to take advantages in such public matters, intended for the general good, they should take no more than their real damage comes to, which, *ad valorem* of the land, will not exceed one farthing *per* load of stone; which would raise fifteen pounds two shillings and six-pence for an acre, or proportionable for more or less.

Your trustees have, undoubtedly, a power to order your surveyors to take materials wherever they can find them, (excepting where the laws have made exceptions) paying for the damages done, of which your justices of the peace for your county are the judges, who surely will never suffer mercenary people to exact twenty-four times as much as they ought to have, which six-pence *per* load comes to; or twelve times as much as they ought to have, which three-pence a load comes to.

There

There is in most gravel-pits, especially those of many years standing, a vast deal of small chisselly stone, or rubbish of stone, of no manner of use, except to mend the roads with. There is an act of parliament, I think, the third or fourth of William and Mary, which saith, The surveyors of roads may take stones and rubbish, already dug, out of any quarry, without leave of the owner; but they cannot dig without leave.

Such small stones, or rubbish of stones, would be of excellent use to level and smooth your rough stony road withal; and where the stone in those pits is of a hard nature, the rubbish, or small parts of them, is preferable to stones of a larger size, because it will make the road smoother, and will bed, or close together, and last as long as gravel; for neither of them will endure very long, unless carefully looked after, by pecking in the ruts where the wheels begin to cut in, and letting out the water, as is above mentioned in p. 195.

The example in p. 196, for reducing the price of carriage to reason, I hope, is sufficient; for by the same method it will be easy to settle the rate of carriage in any other part of the road; and had I a longer time to think of this affair, I would have parcelled out for you all the road from *Harborough* to *Lampport*; but that may be done hereafter. I believe, if you have not teams enough about you, or they are not willing to carry at, or about, the wages I have set, I could send some teams from this side the country, who, for the sake of ready money, will comply with it.

The table of rates for carriage, proportioned to the distances carried, is right as to what was paid, or agreed to be paid; but it had been better for them that did carry it, to have abated one penny a load in the carriage, and had their money down, than trust two years for it, as in p. 188: but that we could not do, being in debt considerably before we went about repairing the road from *Glen* to *Great Bowden*; on which occasion we borrowed fifteen hundred pounds; but the charge amounting to three thousand at least, we were obliged to make the agreement for time, as is above

recited, or not carry on the repairs the length we have done; which argument made so great an impression on the farmers, (their fields being all open, and torn to pieces with carriages, the roads not being passable) that they readily came into whatever I advised them to offer to the trustees, as likeliest to prevail with them to order the roads to be repaired any further, at a time, than the income of the tolls, and duty-work, would permit; for of that way of thinking were many of our trustees, till they saw the generous and free offers of the farmers to do six days duty-work instead of three, and to discount it off their earnings, after the rate of six or seven shillings *per* day, and to give credit, so as to make repairing the roads feasible.

But as the fields adjoining to the roads proposed to be repaired betwixt *Harborough* and *Lamport*, are not so liable to damages as ours were, the greater part of them being inclosure; nothing more is to be expected from your farmers than what you actually pay for; and it is well if they will do that on reasonable terms.

As to statute-work, or duty-work, as we call it, if I am rightly informed, nothing of that nature has been performed on your road; whether it has been designedly overlooked, or taken for granted that the act for repairing your road does not require or intend it, though I think the clause in your act is expressive both of the duty-work in general, and of particular persons who were obliged to repair any particular places of the said road, which by usage, custom, or otherways, they were obliged to repair. But because the inhabitants, and persons keeping teams, and occupying fifty pounds *per annum*, (which by the statute of the seventh and eighth of William III. is deemed a plow land) might alledge they had done six days duty-work already on one part or other of the roads in their respective parishes, to prevent such like evasions, a clause was added in our act, immediately succeeding the clause above cited in your act, appointing that three days, of the six days duty-work enjoined by the laws of the kingdom to be performed on the roads, should annually be performed
on

on the road intended to be repaired by our act, under the same penalties inflicted by the laws for repairing the roads in general (for default or non-performance); and we strictly hold them to it, pursuing the statutes of the second and third of Philip and Mary, chap. 8. sect. 6. the statute of the eighteenth of Elizabeth, chap. 10. and the statute of the seventh and eighth of William III. chap. 29. sect. 57.

And if any person lives at ever so great a distance from his tenure, and keeps no team, but grazeth, or otherways occupies fifty pounds *per annum*, we make him either hire a team, or pay us six shillings a day for the three days, to be applied towards repairing the road in the parish through which our road doth lie: and we have, in *Leicester*, men who occupy fifty pounds *per annum* at *Belgrave*, fifty pounds *per annum* in our parish of *St. Margaret*, and fifty pounds in our parish of *St. Mary*, whom we oblige to do three days duty-work with a team for each and every of them annually, or pay as above, (our road lying through all the said parishes) and all little enough, notwithstanding the income of our toll, to pay our debts, interest money, and keep the road, when repaired, in good order.

You have seen, p. 191, the account which the management of the duty-work turns to.

The income of your toll being so very small, it is to be wondered at, that the duty-work, which would have struck a fair stroke in keeping your roads up in repair after you had amended them, should be neglected, or overlooked; and notwithstanding you have none of that necessary clause mentioned in our act, particularly to ascertain the number of days they should work on your turnpike-road, as is above named to be in our act, yet, with submission, I do humbly suppose it in the power of the justices of the peace for your county, at a quarter session, to appoint how many of the six days statute-work shall be done on your turnpike-road by each parish, or liberty, through which the said road does go.

Another observation I beg leave to mention, occasioned by reflecting on the smallness of the income of your toll, is, that, with humble submission, I think there is not so much raised by it as might legally be raised by adding another toll-gate near to *Harborough*; for if it is considered how many towns on the east and on the west of your road, that have no occasion to come to *Pisford* turnpike, yet enjoy the road repaired by you, and pay nothing at all; but they, and all other roads that centre at *Harborough*, might all be taken in there, as in a net.

I am sensible some objections may be made to this, as the hardship it will be to some few towns that lie very near to *Harborough*, and to the people that travel betwixt *Thrapston*, *Kettering*, *Rowell*, and *Arthingworth*, &c. that will but just cross your road to travel a very small way in it, especially *Harborough* and *Bowden*.

If the objectors can name me any turnpike that is not somewhere or other hard to one place or other on it, as it would to any of the towns above, I shall be obliged to them for the information.

I think it morally impossible wholly to prevent such hardships, and raise any tolerable sums of money to repair the roads with; and if it cannot be done, for favouring this and the other particular town or place, I cannot see how the roads can be repaired at all.

I have not yet taken the account of what *Pisford* turnpike is now in debt; but I imagine it to be near as much as the turnpike can spare money (doing some small matters at the road) within the five years to come in the act, which, if renewed, will be a sufficient security for those gentlemen, that have money, to lend a couple of thousand pounds; less than which I fear will not repair the part of your road I have mentioned, so good as you would have it.



The Road from HARBOROUGH BRIDGE *to* NORTHAMPTON,
measured by Mr. EYRE.

[See the plate.]

	M.	F.	P.	Yards.
From the said bridge to Oxendon church	2	1	18	3839
From Oxendon church to Oxendon bridge	0	3	0	660
From thence to the bridge of one arch in the lane — — — —	1	6	14	2537
From thence to the cross road to Arthing- worth — — — —	0	3	13	732
From the said cross road to Kelmarsh inn	0	2	8	484
From thence to the end of Maidwell lane	0	4	34	1067
From thence to Maidwell windmill —	0	2	30	627
From thence to the trees at L. Ruffel's gate	0	6	39	1539
From thence to Maidwell bridge —	1	0	5	1787
From Maidwell bridge to Lamport town's- end — — — —	0	6	10	1375
From thence to a tumulus, or barrow, near Brixworth — — — —	1	5	18	2969
From thence to Brixworth — —	0	4	19	985
From Brixworth to the toll-gate at Pisford bridge — — — —	1	3	5	2447
From the toll-gate to Buckton bridge —	1	1	32	2156
From thence to the White Horse in Kingf- thorpe — — — —	2	1	32	3916
From thence to the George-inn in North- ampton — — — —	1	5	8	2904
	<hr/>			<hr/>
	17	3	5	30024

In the liberty of *Bowden* are two gravel-pits, on each hand the road.

One on the top of *Oxendon* hill.

Northwest of the church, a gravel-pit.

On the north end of *Kelmarsh* lane, a good gravel-pit.

A good gravel-pit in *Kelmarsh* lane, near the turn to Mr. *Hanbury's* house.

Several

Several stone-pits on each hand the road in the liberty of *Maidwell*.

Several gravel-pits about *Lamport*, and towards *Brixworth*, and stone-pits.

In page 196, I dropt one furlong and nineteen perches, or three hundred and twenty-five yards in measure, of the road from *Harborough* bridge to *Oxendon* church, not only to make the computation more ready and easy, but because from the rill against *Bowden*, to *Harborough* bridge, is so near to the gravel-pit there, that the carriage will hardly be worth a third of the value of the other, and, in case of duty-work, may perhaps be well near done by the *Bowden* teams.

From *Harborough* bridge, from the hand that points towards *Thrapston*, the ground is naturally descending, and fit for gravelling with small trouble; and to the south of the said hand or post, for a good way lieth very well; but afterwards till you come to the rill it lyeth very flat and hollow, and the ground on the west side of the road, for the greater part of it, higher than the road can be made; so that it will require an arch about the middle to convey the water that comes into the ditch, on the west side the road, under the road to the ditch on the east side of the road, and so to the rill, either directly, or by a cut purposely made for it.

An arch should be two foot longer at each end than the road is wide, to prevent falling in of the gravel to stop the current: the width of the arch, from wall to wall within, is to be governed by the quantity of water that is likely to run through it; but by reason it will sometimes want to be cleansed, and a person must then go into it, about two foot clear from wall to wall, or two or three inches under or over, will do; but if it is two foot and a half wide, it will not encrease the expence any thing worth naming.

The wall ought to be a brick's length and a half, or fifteen inches, thick; and the foundation a foot within the ground below the surface of the current; and the wall in height two foot and a half, to three foot high, above the surface of the current, in the setting on the center, which should be af-

ter the semicircular manner, to throw the weight perpendicular on the walls.

If there are not strong natural buttments to support and keep up the walls, such must be made by art, with stones, or brick-bats, laid in coarse mortar; the centre to be covered with double or two rows of bricks set all edge-ways, the joints of the first to be covered with the second course: and as these arches or little bridges must be well covered with good strong gravel, the depth of twelve inches at the least, there must be side walls or battlements made with bricks set edge-ways to keep the gravel up: about three courses from the brick-work of the arch may be sufficient. The middle of the arch thus made will appear in sight, like one of the mounds we make in the road, to give a current to the water that falls thereon, and must rise and decline in like manner for some distance on the road on each side it, which will be a great strengthening to the arch. The expence or charge of such arches differs a little, according to the prices of bricks, lime, carriage, &c.

The greatest expence of any one lately made by us has not exceeded five pounds; and the last we made, the whole charge of materials, carriage and workmanship, did not reach four pounds, and is, I think, the best we have made.

We have experienced the benefit of screening the gravel, when it has abounded too much with sand, earth, or clayish particles; which, taken as it came together, rather made our roads worse than better, but when separated, and using the grosser part only, has made the roads incomparably good; and if the rubbish or chisselly stuff in your stone-pits, which are of no value at all to the proprietors, and of which, no doubt, there are thousands of loads to be collected, was served so, it would be preferable to the larger stone, and to any gravel whatever, for repairing the road, and would bed between, and fill up the spaces, that now are in your rough stony road, and make them smooth and easy at the top.

We make our screens six foot long, and the width of a common lath's length, and make use of the straightest and best of the laths, which are nailed at each end, and in the middle,

dle, to a sort of frame, to keep the laths at a regular distance, of about one inch, one from another: the wood that the laths are nailed to is about two inches over, and three deep. There needs no description; for, no doubt, you make use of such for the gravel in your own garden, only of a more costly make or sort. I had ours ready made for five shillings a screen.

The method proposed for amending your roads, in pages 194, 195, 196, and relating chiefly to such parts of the road as have been already repaired by you, and where we cannot do otherways without too great an expence to you, and throwing away the first cost, (otherwise the road from *Harborough* bridge to the bottom of *Oxendon* hill might be made strait, &c.) and on further mature consideration of what is laid down in the pages above named, will, if pursued, make your roads very good to *Lamport*; and for the rest of it, I should strongly recommend the modern way of repairing, as in pages 185, 186, for notwithstanding you have a few flats in that road, (which may be helped a little) the far greatest part of it lieth naturally so well, having easy ascents and declivities, excepting one hill or two a little sharp, that a man can hardly meet with a road more favourable to be repaired.

But I am apt to think you will not come to any resolution in the affair before you see what success you shall have in renewing your act; which will take up some time, and, I hope, give me an opportunity to view and examine your roads myself, which I very much desire, before I give you my further observations and opinion thereon, and of every particular part of it, as I intended to do*.

* The remaining part of this piece shall be inserted in one of our future monthly pieces, which gives an account how the prices have been since reduced, and what improvements have been added since this first account was made.

*A Table Shewing the Price of the Carriage of Gravel
at any distance not Exceeding Four Miles from the Pit*

Distance from the Pitt.		Price per Load.			
Yards.	Miles. Furl. ^s	S	d	q	
0 0 0	near the Pitt.	0	2	0	The Cart Load of Gravel contains 20 Strikes, heaped up, each Strike weighs 1 Hund. ^d & $\frac{1}{2}$, So that each Load weighs 30 Hund. ^d weight.
2 2 0	0 : 1	0	3	1	
4 4 0	0 : 2	0	4	2	
6 6 0	0 : 3	0	5	3	
8 8 0	0 : 4	0	6	3	
1 1 0 0	0 : 5	0	8	0	The usual price of a Team & 2 Carts is from 7 to 8 th p ^r Day; they work 8 hours each Day, and move at the rate of about 2 Mile & $\frac{1}{4}$ or 2 Mile & $\frac{1}{2}$ in one Hour.
1 3 2 0	0 : 6	0	9	1	
1 5 4 0	0 : 7	0	10	2	
1 7 6 0	1 : 0	0	11	3	
1 9 8 0	1 : 1	1	1	0	
2 2 0 0	1 : 2	1	2	1	N.B. It is here supposed that the Roads are tollerable good and Level, if not; Reasonable allowance should be made.
2 4 2 0	1 : 3	1	3	2	
2 6 4 0	1 : 4	1	4	3	
2 8 6 0	1 : 5	1	5	3	
3 0 8 0	1 : 6	1	7	0	
3 3 0 0	1 : 7	1	8	1	
3 5 2 0	2 : 0	1	9	2	
3 7 4 0	2 : 1	1	10	3	
3 9 6 0	2 : 2	2	0	0	
4 1 8 0	2 : 3	2	1	1	
4 4 0 0	2 : 4	2	2	3	
4 6 2 0	2 : 5	2	4	0	
4 8 4 0	2 : 6	2	5	1	
5 0 6 0	2 : 7	2	6	3	
5 2 8 0	3 : 0	2	8	0	
5 5 0 0	3 : 1	2	9	1	
5 7 2 0	3 : 2	2	10	2	
5 9 4 0	3 : 3	3	0	0	
6 1 6 0	3 : 4	3	1	1	
6 3 8 0	3 : 5	3	2	2	
6 6 0 0	3 : 6	3	4	0	
6 8 2 0	3 : 7	3	5	1	
7 0 4 0	4 : 0	3	6	3	



NUMBER LXIII.

A Letter to the Editors, describing a Method of making Honey Wine.

GENTLEMEN,

I Was much pleased with the subject of a letter in your last Number, signed *A Rusticated Student*, as it may induce some others of your correspondents, as it has me, to communicate to the public, through your means, improvements in making English wines; which are so very useful, and, in some families, so conducive to health and private œconomy. My intention at present is to propose a method of making honey-wine, a liquor very different from that rich cordial known by the name of mead. From the simplicity and ease of this method I was induced, the last and present year, to make trial of it, but, indeed, have had so little experience of the effect, as to be rather doubtful, and, at the same time, very desirous of procuring the opinions of those who may themselves have had experience of it, or who, perhaps, may have any rational objection to it, which I flatter myself I shall receive from some of your numerous correspondents. The method is no more than this.

Throw *cold* water upon honey, in the proportion of a quart of water to a pound of honey: in the course of two or three weeks, and with a little stirring, the honey will dissolve, and a fermentation will come on, without the help of yeast, which impregnates the wine with a disagreeable beery flavour: then put it up, and at a proper time stop it close. This is the whole process with me. I can as yet only say in favour of my wine, that now, at the end of one year, it carries so little the taste of honey, as agreeably to deceive those who have drank of it*.

The

* We should be glad if this correspondent would, in future, inform us how his wine stands the summer's heat. E.

The trouble, expence, and waste of boiling the liquor, are thus saved. But the query is, whether honey and water require boiling, as is commonly imagined, any more than raisins, currants, and many other fruits, which are often made into wine.

Westminster, AN OCCASIONAL CORRESPONDENT.
May, 14, 1764.

NUMBER LXIV.

A Letter from a very considerable North-American Planter, to the Editors, respecting the great Benefit of Salt to Cattle, with the Method of using it.

GENTLEMEN,

I Do not find that the farmers in England know the great advantages which may be derived from the use of salt in the business of fattening cattle; whereas in America we think it, in a manner, absolutely necessary, and accordingly give it to almost every kind of cattle; and those with parted hoofs are particularly fond of it.

There cannot be a greater instance of this fondness, than the wild cattle resorting to the *salt licks*, where they are chiefly killed. We give this name of *salt licks* to the salt springs, which, in various places, issue naturally out of the ground, and form each a little rill.

Horses are as fond of salt as black cattle; for with us, if they are ever so wild, they will be much sooner brought to a handful of salt than any kind of corn whatever.

We also give salt to our sheep; and to this practice is it generally ascribed, that the American cattle, in general, are so much more healthy than the same animals in England: certain it is, that they are there subject to much fewer diseases.

There is one very advantageous practice we have, which I cannot enough recommend to the notice of the farmers

here in England: it is mixing salt with our hay-ricks when we stack it, which we call *brining*.

Just before I left America I had a crop of hay, which was in a manner spoiled by rain, being almost rotted in the field; yet did this hay spend as well as if it had been got in never so favourably.

When my servants were making up the stack, I had it managed in the following manner; that is, as soon as a bed of hay was laid about six inches thick, I had the whole sprinkled over with salt; then another bed of hay was laid, which was again sprinkled in like manner; and this method was followed till all the hay was stacked.

When the season came for cutting this hay, and giving it to my cattle, I found that so far from refusing it, they eat it with surprizing appetite, always preferring it before the sweetest hay, that had not been in this manner sprinkled with salt.

I have, in North-America, some very considerable plantations; but having been for some time in England, I dedicate all my leisure hours to the study of agriculture; and have regularly, since the first publication, taken in the Numbers of the *Museum Rusticum*, with which I cannot but in justice declare myself perfectly well satisfied; and am of opinion, it will be of great service, not in England only, but in America also.

I am, GENTLEMEN,

Your constant reader, and

A purchaser of your work,

London,

May 14, 1764.

AMERICANUS.

NUMBER LXV.

To the Editors of the MUSEUM RUSTICUM.

GENTLEMEN,

THE inclosed trial having been made with great accuracy, I have taken the liberty to send it to you. You may, if you please, communicate it to the public.

April 23, 1764.

I am, GENTLEMEN, your humble servant,

Y. Z.

An Account of the Progress of Grain from the Market to the Mouth, by a Trial made near Kettering, and exhibited before Four of his Majesty's Justices of the Peace, for the County of Northampton, August 3, 1757.

A bushel of	Bought at	Weight by the market measure.	Weight by the standard measure.	Surplus above the standard.	When ground into meal.	When dressed into flour.	Bran.	A bushel of it half made into dough.	Weight of the loaves unbaked.	Weight when baked.
		lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.
Wheat,	Kettering,	61 8	60 0	1 8	58 12	45 1	12 6	Flour 22 8½ Water 9 11½ Barm 0 12 Salt 0 4 Dough 33 4	Four twelve-penny loaves, each at } 7 4 Odd weight 29 0 4 4 33 4	Four twelve-penny loaves, each at } 6 9 Odd weight 26 4 3 0 29 4
Barley,	Harborough,	50 0	48 8	1 8	48 0	39 4	8 8	Flour 19 10 Water 11 2 Barm 1 0 Salt 0 4 Dough 32 0	Two twelve-penny loaves, each at } 1 0 Odd weight 30 0 2 0 32 0	Two twelve-penny loaves, each at } 13 15 Odd weight 27 14 1 4 29 2
Rye,	Harborough,	56 8	53 0	3 8	52 12	30 14	21 2	Flour 15 7 Water 6 5 Barm 0 12 Salt 0 4 Dough 22 12	One twelve-penny loaf } 14 0 One six-penny loaf } 7 0 Odd weight 21 0 1 12 22 12	One twelve-penny loaf } 13 0 One six-penny loaf } 6 8 Odd weight 19 8 1 0 20 8

NUMBER LXVI.

Miscellaneous additional Observations on mowing of Wheat, pulling of Horse-Beans, &c. in a Letter from the Rev. Mr. Comber to the Editors.

GENTLEMEN,

BY the neglect of the carrier (as I am above twenty miles from York) I received not your N^o. IV. till yesterday. The perusal of it has suggested some thoughts, which I intend to arrange in this letter as miscellaneous additional observations on mowing of wheat, pulling of horse-beans, and some other subjects.

As I approve the whole tenor of your correspondent *Clericus's* letter, No. LVI. Vol. I. page 241, so I particularly admire the justice of his reflections in the close, concerning every method of shortening the labours of husbandmen, and thereby giving more hands to our manufactures; and by lessening the price of labour, and the food of the labourer, which must always rise and fall together, enabling us to out-rival our *frugal* and *industrious* antagonists in commerce.

They are such reflections as a naturally sensible mind, improved by that extensive plan of education which gentlemen of his profession generally do, and always should, enjoy, might reasonably be supposed to produce.

And here allow me to observe, as several of your correspondents judiciously remark, that improvement of agriculture in this nation must greatly depend on the influence and example of the gentry, so there is probably no class of gentlemen who can contribute more to this improvement, than the clergy, for several reasons, which, though they seem obvious, I will briefly mention.

One is, that their duty obliges them to mix so much with the husbandmen their parishioners, and establishes that

kind of familiarity with them, that they have much better opportunities of hearing and correcting the erroneous opinions of this class of men in matters of their daily employ than their landlords have, of whom they generally stand in too much awe to discover their own sentiments freely, or with composure of mind to receive their instruction.

Another is, that the nature of a clergyman's provision generally obliges him to cultivate *all* or a *part* of his glebe, thus confirming his precepts by example.

A third is, that clergymen, by having generally the power of letting tithes to their parishioners, have it in their power to give without *any*, or *considerable loss*, nay, perhaps, *with gain* to themselves, encouragement to the farmer to try new methods of husbandry.

A fourth, and the last I shall mention, is, that clergymen, by the turn of their education in general, (and especially such as have been educated at *Cambridge*) are deeply grounded in the principles of sound natural philosophy, consequently inclined to probable experiments, and guarded against hasty conclusions from a few trials.

For these, and other reasons, which may be suggested, (and particularly one mentioned by your worthy correspondent *Clericus* in the close of his letter) I shall be always glad to see, in your work, letters from gentlemen of that profession, (to which I have the honour to belong) with their names at length, as no set of men are more obliged, by every kind of rational bond, to promote the prosperity of their country.

I do not wonder that your correspondent *Clericus*, being known to be likely to give some explication of the names of the respective scythes delineated in the plate to your Second Number, should be recurred to for that purpose; and which ever of you, gentlemen, was the author of the note in page 160, will (I dare say) confess that he was deficient in the description there given of them. And I must add, that there is certainly a gross mistake in the description of the largest scythe, occasioned by a material transposition

transposition of two letters, *viz.* of *a* and *b*; the former of these letters really denoting the point, and the latter the heel.

Nothing but extreme modesty, gentlemen, could, I think, incline your truly-ingenious correspondent, *Clericus*, to make a doubt, as he does in page 243, whether the working the Hainault scythe with only one hand be an *advantage* or a *disadvantage*.

Reason, which will yield to nothing but experiment, leads us strongly to conclude it the latter. Such strong work as mowing, and especially for a *whole* day, nay, *several whole days* together, requires the united effort of both hands, and these applied in the most artful manner.

Your correspondent, "*a Silent Member*," justly observes, in page 267, that experiments of cutting a small quantity of corn can never determine the real merit of any scythe; and if I am not more deceived in appearances than I ever was in my life, by experiments proposed to be made next harvest with the several scythes, it will be found, that work done for a *considerable* time with this *one-handed* scythe will appear contemptible, when compared with that done in the same time with some other scythes.

Indeed the assistance which is given to this work, by the hook in the left hand of the mower, is so trifling as scarce to deserve a mention, whilst it greatly retards the operation of the other.

The more complicate the motion of any labourer is, evidently the less efficacious it must be: and if the mower has skill to take his corn properly with its sway, he will need no hook to incline it to him; and as to his gathering it, it is most apparent that he, with so heavy an instrument as his scythe in one hand, will be much more retarded in his mowing than will answer the expence of a gatherer, who may be a woman.

Your ingenious correspondent, "*a Silent Member*," has found out, No. LXIII. Vol. I. page 266, a great resemblance betwixt the mower with this scythe and hook, and

the Kentish reaper of beans with his *hink* and *twibill*: and as it is reasonable to give this scythe a *fair trial*, it may be likewise reasonable to put it into the hands of these operators; but for the reasons above specified, and others which might be added, there is no sort of probability that there will be any comparison of its utility, when best managed, with that of other scythes.

To evince this probability still further, let it be considered, that if the bearing the weight of the scythe in one hand were no impediment to its motion, and that the working with the hook were also none, still this *Hainault* scythe cannot be supposed to do above half as much work as our common scythe, because (as your correspondent *Clericus* remarks, page 242) it is but about half the length.

But if we consider how much the burthen of the scythe on one hand, and management of the hook with the other, must retard the motion, it is probable, that not nearly the number of strokes given with our common scythe will be given with this of *Hainault*, and consequently not nearly half the work will be done.

I should not, gentlemen, have considered this awkward scythe so much by far as I have done, had not the favourable accounts given of it been likely to lead people into the use of an instrument much less convenient than others they may procure.

Your worthy correspondent, *Clericus*, judiciously prefers the scythe marked fig. 3. in your plate, to either of the others. Yet the advantage he insists on, *viz.* That by taking the left handle higher or lower, it is accommodated to the use of workmen of different heights, a thing no other scythe can boast, seems neither *very material*, nor *very well founded*.

It seems not *very material*, because every workman must have a scythe, and this he will accommodate to his own height, &c. It seems not *very well founded*, because if the right handle is fixed invariable, it can only suit men of one height; and by the taking of the left handle higher

or lower, the edge of the blade will only be raised or lowered, but the whole engine will be no fitter for men of different heights than it was before.

On the contrary, the handles of our common scythes being moveable on the shaft, and fixed only by a wedge which can easily be moved, the same scythe may, with great expedition, be fitted to workmen of different heights, just as the laying the blade into the shaft by a ring and wedges renders the same scythe fit for the same man in different grasses or corns, as it is to cut higher or lower.

But if this *Brabant* scythe has not any advantage on these accounts over our common ones, it has an acknowledged disadvantage, *viz.* That it is about six inches shorter than our common ones; and, consequently, since these are very manageable, it loses six inches breadth of work in every swathe; a very considerable loss.

Your "*Silent Member*" seems (page 267) to doubt whether more work will be dispatched by any of these scythes, than by sickles; but it is a fact most notorious, that much more is dispatched by our common scythes.

Indeed it is astonishing to me, that no one of your correspondents should bring into comparison with these foreign scythes our English ones, when the wheat in so considerable a part of this corn country is mown. One would think the fact *too notorious*, and *too important*, to have been passed over in silence.

As to reaping of beans with the *hink* and *twibill*, it seems liable to great and just objections.

The former is not an instrument formed to hold the stalks of so stubborn a corn as beans sufficiently tight, and the *twibill* can cut no more stalks than it fairly reaches; and (besides the general objections to cutting of beans, that it necessitates us either to cut them unripe, or to waste them) any instrument of this sort will require frequent sharpening, and occasion a considerable loss of time.

One advantage of reaping with the sickle is well known to be, that the reaper holds the corn tight in his left hand,

cuts

cuts it nearly all of the same length, consequently more convenient to be bound together, and then by an easy operation lays it down in gavels; whereas, by the use of the *twibill*, the stalks will be left all scattered.

Your correspondent *Rusticus*, in No. LXII. Vol. I. page 263, informs us, that some farmers in the isle of *Thanet* (so famous for the neatness of their husbandry) pull their beans. This, he adds, indeed, is where the crop happens to be *thin*.

But, perhaps, on enquiry, he may find this rational practice followed when the crops are *thick*, at least, when they are *not over-thin*; for a thick crop of beans is far from being better, *cæteris paribus*, (as the philosophers say) than one moderately thin; the pods requiring much earth for their large roots to support them. The only considerable obvious inconvenience which seems to attend pulling of beans, *viz.* That the stalks will be so bruised by the grasp of the hand, as to afford little nourishment to the pods afterwards, may be in a great measure avoided, by grasping of the stalks low, and pulling them in one direction.

As to the advantage of a *shim*, used by the farmers in *Thanet*, it depends on the proof that so much ground as is necessary for the motion of it is *usefully left unplanted*. If this can be made out, it may be used with the method of planting the beans which I have recommended, and which is much more regular, and less expensive, than that of *spraining* them by women.

I am, GENTLEMEN,

Your obedient servant,

THOMAS COMBER, *Junior*.

East-Newton, near Malton,

Feb. 14, 1764.

NUMBER LXVII.

Observations on Mowing, Shocking, and Stacking of Wheat; and preparing Land for Wheat, by other Crops, &c. from the Reverend Mr. Comber, to the Editors.

GENTLEMEN,

WHEAT is so truly, what it is called in your work, a noble seed, that every discourse, which has a tendency to promote its successful culture, deserves the attention of the public.

One of you, who signs himself E. has desired from me an account of the manner of mowing wheat in the wolds; and of the difference, if any, betwixt the mowing of it, and of barley, or oats. I apprehend, that note was printed before a former packet of mine was received. If any more particulars relative thereto, and known, or knowable to me, shall be desired by you, I will communicate them.

There is, however, one circumstance relative to the mowing of wheat, which I think I forgot, in my packet communicated to you, to consider. Your correspondent, S. K. (Number IV. page 21.) says, “ I have myself, for some years, thought that wheat might better be *mowed* than *reaped*; but what hindered me from making the experiment, was my being conscious, that it would be necessary, as well to find out a method of mowing wheat that grows on *high ridges*, as that which grows on *stitches* and *flat lands*: this was the difficulty that occurred; this prevented my carrying my thought into execution; and this, I even now think, is not easily to be got over.”

The wolds lands are, for the most part, high, and so dry, as not to be plowed, generally, with high ridges, to carry off the water: so that the inconvenience, supposed by

by your correspondent, is not much known to them : but in his country, *Essex*, and many others, perhaps, wheat lands cannot be sown to any advantage without high ridges. Let us enquire then, how the supposed inconvenience in mowing of them may be obviated.

It is obvious, that if a mower goes on the very ridge of the lands as the centre of his sweep, he must leave his * stubble very high on both extremities, let him cut ever so near on the ridge : but if one mower begins his stroke just at the ridge, and mows on one side of the land, he will find very little inconvenience in mowing a gentle declivity sideways : and he, who mows the other half of the land, will find nearly as little in mowing the acclivity : the plowman, who knows that his crop is to be mowed, may dispose his lands so, that half an one shall be just the sweep of a good mower.

But if the ridges prove very inconvenient to mow in this manner, which, I think, will *seldom* be the case, another remedy is at hand, *viz.* to mow the wheat in the same manner as the grass of high-ridged lands, is often mowed, *viz.* transversely : the motion of the mowers, in this method, will be somewhat retarded, perhaps, by going up and down, and by stepping over the furrows ; but the corn may be gathered very conveniently.

It is well worth the time for the husbandman to consider what crop is the best preparative for wheat to be sown on fresh land. The rankness of this soil, if nothing be sown upon

* Mr. *Irwin* assures us, that wheat stubble is left in Ireland twelve or eighteen inches long, and that it makes the *best thatch*. It may be well worth mowing for thatch, and might better have been mowed with the rest of the crop, at once. But how can it be the *best thatch*, unless there be no rye straw ? The *Essex* farmers, who allow labourers to mow the stubbles for their own benefit, are, surely, imprudent ; for on *supposition* that this stubble were improper manure for the light soil on which it grew, (and it is much easier to *suppose* than *prove*) yet, if it were *heaped* and *mellowed*, it must make an excellent manure for lands of an opposite nature, and amply repay the expence of mowing. COMB.

upon it before the wheat, will often make the corn so strong as to *lie* or *ledge* before harvest ; and then the mischief done to it, both by rain and birds, is almost incredible.

To prevent this, it is most reasonable to sow white peas, which delight in fresh land, and are a valuable crop ; just as it is adviseable to sow oats on the fresh land designed for rye ; for oats on rich lands, fit for wheat, would be likely to be so rank a crop as to lie themselves.

I have been told, gentlemen, with great confidence, that clover prepares ground for wheat in such a manner, that the soil, which without it would only bring rye, with it will produce good wheat. If this assertion be founded on fact, it is a benefit arising from clover, which ought to place it very high in the rank of grasses, as naturally good wheat land is often not to be found in a large track of country.

However, though much clover is grown in this country, I know no one who has tried the experiment ; nor have I an opportunity of trying it : nor can I conceive any principle on which clover can produce this supposed effect : it has a strong root, which spreads and opens a compact soil, and therefore excellently prepares land for barley ; but how it can *condense* and *enrich* a *light thin* soil, I am unable to imagine.

Your correspondent signing himself “ *A Quondam Farmer,*” (in Vol. I. Number C. page 432.) speaks of the custom of laying sheaves of corn in shocks, and capping them, as though it were confined to *Somersetshire* : but it is known to obtain in all this vast tract of corn country northwards ; and great numbers of your readers, had they not been informed, by that same correspondent, that in *Wiltshire*, and some more southerly counties, it is the custom to leave most of their corn, without care, to the chance of weather, would not have imagined, that any, calling themselves husbandmen, could be so negligent.

Your said correspondent justly recommends the *reek-staval*, or *staffold*, a frame of wood for the mow, placed

on stones, to be used where the barns are at a considerable distance from the field, (page 433).

As to his proposal of building barns up and down the farm, I cannot approve of it, for many reasons too long to be here inserted: but any scheme for securing a crop, especially one so valuable as wheat, deserves attention. Our farmers, in this part of the world, usually stack their corn in the field, when they have great quantities; for they find so much waste of it, whilst in the barn, by vermin, that they chose to have it there only for threshing: and by stacking their wheat on the ground, with only a bed of thorns, or sticks and straw, to keep off the damp, they find very little loss ensue; the mice or rats which are found in a stack, especially if it stand not over the year, being very few: however, the *reek-staval* may be a better preservative, both against dampness and vermin.

Yet I should recommend another method, preferable to both; which is, to prepare six or eight oaken posts, about three or four feet long, and stout; and as many strong flags, which will project some inches over the tops of these on every side, when they are fixed upright in the ground: a frame of wood, fastened at the four corners with wooden pins, must also be prepared, and a few coarse cross bearers: a load or two of thorns or furze thrown on to these, and covered with straw, make an excellent bed for the corn. The expence of this apparatus is trifling; and the whole may be brought by the waggons which come to load the corn, and removed any year at harvest.

Our farmers here have one bad custom relative to stacking their corn, *viz.* forming the stack at some corner near some hedge: the design is to save fencing; but they often trust to an insufficient hedge, and lose more in one day than would pay for good stout stack barns, easily removed from one, and set down in another place. I am,

GENTLEMEN,

East-Newton,
March 28, 1764.

Your candid reader,

THOMAS COMBER, jun.

N U M-

NUMBER LXVIII.

A Letter to the Editors, from the Rev. Mr. Comber, relative to the best Alleviations of Smuttiness and Sproutedness of Wheat.

GENTLEMEN,

GOOD wheat is so often spoiled by *smuttiness* and *sprouting*, that any observations, which tend to lessen the effects of these evils, deserve great attention.

The former of these evils, which proceeds from a few blighted ears perhaps, (whose substance, reduced to powder by the blight, communicates itself to the rest, and destroys their fine colour) admits some alleviations, but such as require great care.

The first is what we in the North call *leafing*, or *gathering out*, the blighted ears. As this operation cannot be performed while the corn stands, without destroying great quantities of the unblighted, the next best method is, to gather them out as soon as ever they are cut; for the longer and closer they lie compacted with the unblighted, the more of their smuttiness they communicate. I would therefore employ children to follow the reapers, and with their little hands dexterously to gather out the blighted ears from the handfuls, and then let the binders follow them.

If a little time be given them to gain start of the binders, and enough of them be employed, the sheaves will suffer nothing from lying unbound the necessary time.

But if this good advice be not followed, through want of hands, or any other cause, the next laudable method is, to lease the wheat before threshing; for this operation so effectually communicates all the blighted matter or smut to the good corn, that no remedy then remains, except washing, and washing in several waters too. And now great care is absolutely necessary in the drying; for, if not well dried, the corn is spoiled, and, if ever so well dried, yet, if the smoke of the drying matter affect it, the taste is spoiled.

But some cautions must be observed in the washing: one is, that the purest vessels and water be used; the other, that

the operation be performed with great quickness, that the waters may only wash the outer coat, not sink into and soak the pulp.

As to drying, the best means unquestionably are *sun* and *wind*; and summer, if attended to, will afford these without showers. But as the corn-grower wants to use a considerable part of his crop before summer's sun and winds come, he must attend to the same cautions which the maltster uses; only his fire need not be so intense.

I have dearly bought experience of the necessity of all these cautions: for on the only likely track of land in this estate, (containing upwards of six hundred acres enclosed) being about fifty acres, which lie on a declivity to the east and south-east, and some small part on the the top of an hill, (while we kept about two hundred pounds *per annum* in hand) we endeavoured to grow wheat for the use of a great family; and though it was excellent in other respects, as it grew on a strong clay near a good lime-quarry, yet with all the attention usually paid to medicating and changing the seed, &c. we never could avoid having smutty wheat, and were obliged to have recourse to the laborious cure of washing; nor can the tenant, who now holds a few acres of this land in wheat, prevent this evil in part; though his land, lying on the top of the hill, has less smut than ours on the declivity had.

And here I must propose, gentlemen, a conjecture, *viz.* That "the general smuttiness of wheat on this tract of land is probably owing to a mineral, often tasted in the water which descends from this hill, and which, I apprehend, mingles itself with the veins of the whole hill, and breaking forth, mixes with the air, and falls in blights." For that the blight proceeds not *immediately* from the earth, seems clear from an observation often made, I believe, *viz.* that some ears of the same root, and consequently some seed, are *blighted*, while others are unblighted. And this circumstance leads me to conclude, that all medicaments of the seed are utterly vain to preserve it from this evil, the season of blighting being long after the shooting, and perhaps even when the original seed is utterly decayed. Nor can I apprehend

apprehend that even smutty seed will *necessarily* produce blighted corn; unless that adust matter be infinitely more corrosive than we have reason to apprehend. If it were so, it must be very unwholsome to eat smutty corn; and yet I have never heard this asserted.

As the smuttiness only affects the outer coat, and even when it has continued long on that, does not corrode it, (as appears from the unimpaired goodness of well-washed corn) I apprehend, that if *smutty* seed be worse than *unsmutty*, it must be so by the smuts stopping the pores of the outer coat, and retarding the swelling of the seed.

No sensible person will buy any but the *best* and *fairest* seed; and the farmer who cannot buy fresh seed, sowing his own smutty seed on land of the same nature generally as that which produced it, has smutty corn again, and ascribes that smuttiness to the seed, which should probably be ascribed to the land. But this, gentlemen, is only a conjecture.

As to *sprouting*, which confessedly arises from wet which falls on the corn, either before harvest, after a certain degree of ripeness, or when it is in the shock, the only alleviations which can be proposed are, I think, the following.

First, to reap no part of the corn which has *been lodged*, with that which *has not*.

Secondly, to keep separate from the rest, the *cap* or *top* sheaves of every shock or stook, if any rain has fallen on them since reaping.

In the third and last place, to gather by hand (if a gentleman is curious for his own table) the sprouted ears.

A little attention and experience will enable any body to do this; the germ of the sprouted ears being *sunk* and *withered*, while that of the untainted corn stands *proud*.

I know not whether a judicious drying of sprouted corn may not do much towards meliorating the quality of the meal: but then I think it should be applied as soon as possible after the corn is gathered; for the longer the moisture continues in the corn, the worse effects it must produce. It would be worth while to try the difference of drying corn equally sprouted at different times after reaping. This

evil, of sprouting, is a terrible one; and every method to lessen it must be a great acquisition.

The wet of the last harvest was such as to make it impossible to find any wheat in any of our markets *perfectly sound*, as an experienced miller, who buys great quantities, assures me. I have lately paid five shillings and eight-pence *per* bushel for the best that can be gotten; and it is sold even for five shillings and ten-pence. 'Tis well known that one handful of sprouted corn will spoil a bushel; and I have seen this year wheat bought for five shillings *per* bushel, whose puddings have had whole spoonfuls of jelly; the effect of the unsound corn; and the flux which has raged in this neighbourhood, and become contagious, is ascribed to the poor's eating unsound corn.

To conclude, I must observe, that as there are several weeds, and particularly mellilot, which give a disagreeable taste to the wheat; so the greatest care should be taken to *lese* * wheat intended for seed, and then to *screen* it: and as the misfortune is, that many of these weeds shed their seed before the wheat is ripe, so they will never be gotten out of the ground, but by mowing them with some crop which is earlier ripe.

The manure also which is made of corn in which these weeds grew, should be laid upon *pasture* or *meadow* land, rather than *arable*, as the seeds will not so easily find *beds* in the former two, fit to enable them to vegetate; or, if they do, they may easily be mown.

The mixing unslaked lime with this manure, some time before it is laid on arable land, (if it is necessary for such) may hasten the vegetation of the seeds so much as to render them incapable of vegetating on the corn land.

I am, GENTLEMEN,

East Newton,

Your humble servant,

March 29, 1764.

THOMAS COMBER, jun.

* I am more excusable for being so *minute* in reference to wheat, as some of my ancestors (Sir John De Newton, &c.) thought agriculture so honourable, as to choose three wheat-sheaves *or*, and a bend *azure*, in a field *argent*, for their arms; which, as descended from the heirs of that family, I have a right to bear. COMB.

N U M-

NUMBER LXIX.

A Letter from Mr. Wood to the Editors, describing a new-invented Harrow-Plow, with its Uses.

GENTLEMEN,

THE many ingenious letters contained in your work have given me great pleasure; and I must also acknowledge, that I have not a little benefited by reading it.

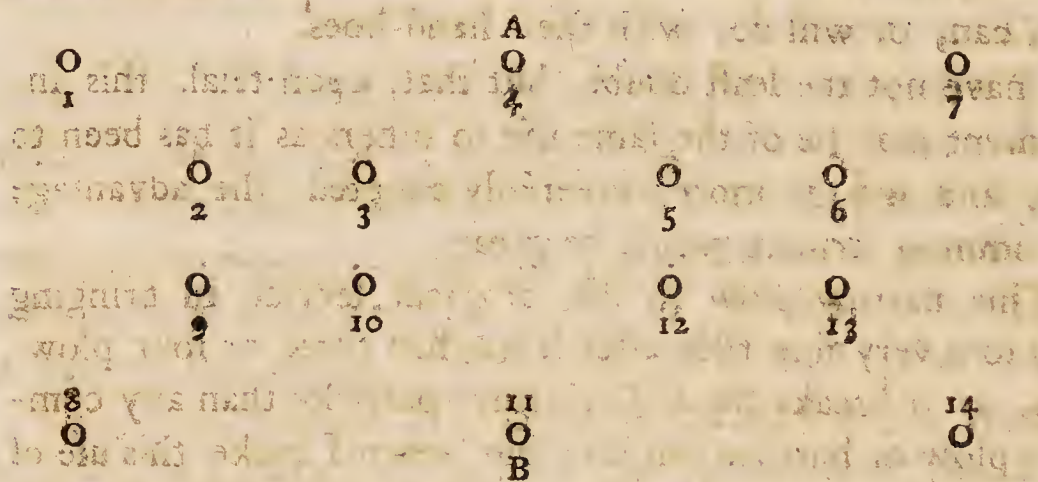
Willing to contribute my small share towards the improvement of agriculture, of which I have always been a passionate lover, I could not any longer refrain setting pen to paper, in consequence of which you receive this paper.

I am, gentlemen, very fond of the turnep husbandry, of which plant I every year sow several acres, and of late manage them in a manner, I think, more advantageous than will probably, at first thought, occur to most of your readers. This method I discovered only by accident; and by the same means most other great discoveries have been made.

A few years since, I happened, by rainy weather, to be prevented from sowing my turneps so early as I could have wished: they took, however, very well, escaped the fly, and grew so fast, that when I was in the midst of my harvest-work, I found they required hoeing: this was very inconvenient, and I was, for some hours, at a loss what to do: at last, however, I came to a resolution of drawing a pretty heavy harrow over them, which might so far thin the plants as to make it not so immediately necessary to hoe them. This, I say, it was my intention of doing; but, before the harrow had gone two bouts, I altered my mind on seeing how little good it did. I then devised a sort of a harrow with shares, instead of tines or teeth: my frame was, in form, like a common harrow; seven feet long, and four broad; the shares were made of iron, with a shank, like a harrow-tine, about eight inches long; and at the bottom was a broad piece of iron or foot, in form of a heart, having a rounded point, being hollowed underneath and rounded
on

on the upper surface : this was about eight inches long, and as many broad ; and the rounded point, and the two sides, were sharpened on the edge like a common hoe.

I had fourteen of these shares in one frame, disposed as here under noted.



By a slight view of the above scheme the situation of the shares will easily be comprehended. A is supposed the front, and B the back part, of the frame. On inspection, it will be found, that when this *harrow-plow*, as I call it, moves forward, the shares, marked 1, 4, and 7, are forwardest, and each cuts away the plants in its way : then come 2, 3, 5, and 6, which make seven shares : as to the other seven behind, they are only intended to complete the work begun by the first set : thus 8 follows 1, 9 follows 2, 10 completes the work of 3, 11 of 4, 12 follows 5, 13 goes in the same track with 6, and 14 is second to 7. It will also be found, that the shares are at about fourteen inches one from the other, and that each share clears about eight inches of land in width, leaving six inches untouched.

This harrow-plow did all I could wish from it, though the first I made was invented, and entirely completed, in the short space of one night.

After I had passed it over the field one way, the turneps were left in stripes, about six inches wide. I then passed my harrow-plow a cross the field the other way, when I found my plants disposed in little spots about six inches square, and eight inches asunder every way.

In this manner they remained till my hurry was over, when I had them hand-hoed in the manner usually practised

at the second hoeing, leaving the plants at fourteen inches distance every way; and I had a fine crop.

This has encouraged me to continue the practice ever since; and I find it much cheaper than hoeing, and also much more efficacious, as the shares of my harrow-plow cut deeper, and move the ground better than any workmen can, or will do, with their hand-hoes.

I have not the least doubt, but that, upon trial, this instrument may be of the same use to others as it has been to me; and was it more universally adopted, the advantage to common farmers would be great.

This harrow-plow is also of great service in bringing land to a very fine tilth after it has had three or four plowings, as it breaks the soil into finer particles than any common plow or harrow can do: but when I make this use of it, I shift the seven back-shares a little on one side, so as to make them go in the intervals untouched by the seven first; and in this way it is of wonderful efficacy in making a fine mould, bringing the land, with very little expence, as little as harrowing, into as fine a state, nearly, as are the borders of a well-kept garden. I recommend it to your farming readers to try the experiment; it can cost them little, and may prove greatly to their advantage.

I am, GENTLEMEN,

Near Chelmsford,

Your constant reader,

April 30, 1764.

J. Wood.

NUMBER LXX.

A Letter to the Editors, on the best Method of spending Turneps by feeding Sheep.

GENTLEMEN,

THROUGH the bounty of a generous patron I enjoy a good rectory, within somewhat more than fifty miles from London, where I make it a matter of conscience to reside, in order to perform in person the duties of my cure.

VOL. II. No. 9.

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Being naturally of a speculative disposition, given to contemplation, and fond of retirement, I found it necessary for my health to take into my own hands the glebe, which had been long lett to a neighbouring farmer. This I did that I might have some temptation to recreate my mind, by the innocent amusements which every day present themselves to the lovers and practisers of agriculture.

I have had no reason to repent taking this step, as I think my health is improved, my income not diminished, and my knowledge and experience in this very agreeable study greatly encreased.

As I seldom let any thing pass unnoticed, the farmers, who live near my house, resort to me on all occasions for advice; and it is my particular happiness, whenever I have it in my power, to remove a prejudice, or establish a useful maxim in husbandry.

Farmers have been said to be a set of men incorrigibly obstinate: I have seldom found them so: we should make all proper allowances: their education is in general narrow, and they have no leisure time to enlarge their ideas by subsequent reading; besides, they have, in general, but barely wherewithal to stock their farms. Is it therefore to be at all wondered at, that they should scruple to rely implicitly on the assertion of every one, who pretends to direct them in the management of their business, and point out to them new methods they never before heard of? I own I should think it much more wonderful if they paid any attention to such precepts.

This is not the way to teach a farmer any improved method of practice.

I could wish that the gentlemen of fortune would be more attentive to the well-doing of their tenants: it is certainly no disgrace for an estated man to be a lover and a practiser of husbandry. In my humble opinion, (I hope you and the public will excuse such an obtrusion) every gentleman ought to farm a part of his estate; a small part I mean, sufficient to make experiments for the advantage of his tenants and neighbours.

Example is generally replete with conviction : for, can any one imagine I would wilfully injure myself, by pursuing maxims which I know to be erroneous ?

I had last winter a piece of turneps intended for feeding sheep ; but my method of consuming them at first astonished my neighbours.

I fed them off by the fold ; but I first turned in some ewes, which greedily devoured all the tops and leaves : when they had finished them, I immediately folded my ewes on a fresh spot.

After the leaves were eat, off the first spot enclosed by the hurdles, by the ewes, I turned in some wethers, which eat with a very good appetite the apples of the roots, leaving, however, the lower part scooped out in the ground : these I had forked up, and they were eat by my store-sheep.

My neighbours were convinced my method was right, because I evidently kept and fattened more sheep on the same quantity of land, than they did ; yet they begged I would give them my reasons for this my practice.

I told them I would readily comply with their request, and the more so as it might be a means of tempting them to imitate what they saw practised with success.

Continuing my discourse, I informed them that many years experience, and constant observation, had convinced me, that if you turn a parcel of sheep promiscuously into a field of turneps, the ewes and lambs would immediately attack the leaves ; the fattening wethers would, for the most part, prefer the apple of the root ; and the store-sheep, not being nice, would indiscriminately devour both leaf and apple, and even eat the leavings of either of the others.

I farther informed them, that I had frequently observed, that when a parcel of wethers have been turned into a piece of turneps, the farmer, thinking to have no waste, generally kept them in till they have eat the roots clean up. But this is very bad husbandry ; for, after the wethers have eat the most delicious and sweet part of the root, they loathe the rest, which is generally gritty, dirty, and sodden, in-

so much that nothing, but absolute hunger, will tempt them to taste it. In this period they pine, and lose flesh; and by the time they are turned into a fresh bite of turneps, they are but little better than they were at first.

The appetite of a beast that is fattening should be tempted, not palled; and undoubtedly, such of the sheep as are most forward will be most delicate; and this delicacy, if the farmer is wise, he will indulge, as it will eventually turn out to his advantage.

Thus, in my manner of feeding turneps, the ewes come first, because they prefer the leaves; the wethers that are to be fattened follow, and make the most pure and sweet repast; and the store-sheep, which are the least nice of any, come last, and clear off the remains; at least, as much of them as they ought to be permitted to eat; for I do not hold it good to oblige them to eat what are in a half putrefied condition, and sodden with dung and stale.

My neighbours were so well pleased with my reasons, and so well convinced by what they saw, that they are determined to adopt my practice; and if any of your readers should be of the same mind, it would give me great pleasure, as I cannot feel a truer joy than what results from my endeavours to be of service to my fellow creatures.

I am, GENTLEMEN,

Northampton,
May 3, 1764.

Yours, &c.

CLERICUS.

NUMBER LXXI.

A Letter to the Editors, respecting the making of Hay.

GENTLEMEN,

AS the hay harvest is not at any great distance, permit me to say a few words on the subject of hay-making.

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I have had, for these forty years past, a deal of experience in this matter; for which reason, what I say may, I think, be depended on.

In the first place, I do not hold it good to let grass stand too long before it is cut: the best time, in my opinion, to begin to mow, is when the plants begin to blossom. When they are in this state, it may naturally be supposed they have attained their largest growth, and are fullest of sap, therefore in a condition of making good, sweet, nourishing, hay. If the plants are suffered to stand longer, till the seeds are perfected, the stalks grow hard, sticky, sapless, and chirky; and, of course, so great a quantity of nourishing juice cannot be concentrated in them.

The least dangerous way of making hay is by keeping it almost all the time it is in the field, after mowing, in grass-cocks, as we do in many parts of this large county. These cocks consist of about two or three forkfuls each, and are often turned, though very seldom spread, unless there is a certainty that no rain will fall till they can be made up again.

I know this method will be objected to, as being slow; but the sureness of it makes full amends: besides, the hay is better than that made in the common way, unless the weather happens to be very temperate and fine: if the weather is sultry, and the sun shines very hot, in the common way, the sap, or juices, of the plant, evaporates too hastily, and the stalk becomes brittle, and contains no nourishment; and in rainy weather, in the common way, the hay is soon spoiled: on the contrary, in the way I recommend, *viz.* grass-cocking, in rainy weather it does not take nearly so much damage, nay, none at all, unless the rain is heavy and of long continuance; and in the very hot sultry sun-shining weather, the sun has only power to dry to a proper degree, and hay the grass, without evaporating too much of its juices, or making it brittle and heartless.

In the neighbourhood of London, the second crop, or aftermath, when made into hay, is of value: but in hay-ing this crop, so as to make it sell well, there is great nicety.

nicety. The nature of the aftermath-grass is more soft, spongy, and porous, than the first growth: it is therefore more liable to be hurt by rain.

I have two ways of haying my aftermath. If I can, I get it in when the weather is fine, and in the middle of the day, after making it in grass-cocks as above mentioned; and when this is the case, it assumes the colour of fine green tea, and is almost as fragrant; and these qualities recommend it at market. But if I find I cannot get it in so fine as I could wish, owing to the fickleness of the weather, I then take care to inn it before it is quite made; or, if it happens by any accident to be over dry, I cart it in the morning early, whilst it is yet damp with the dews, and stack it forthwith: I take, however, the precaution of making proper vents or air-channels in different parts of the stack, lest it should suddenly fire: the hay stacked in this damp state is always mow-burnt, which I always intend it should be to a certain degree, as I am convinced, and so are many who purchase of me, that horses, in general, will thrive better on this hay than on that which is inned in the finest order. By this simple management a rainy hay-season does me less damage than most of my neighbours.

In the northern parts of this county, many are of the same opinion as I am in this respect, and chuse to have all the hay, they intend for their own use, mow-burnt; and their horses prefer it before any other, seemingly better, hay.

I have found it of great use to bestow a watering on my fields, by means of water-trunks, immediately after my first crop of hay is got off. This brings the plant forward, and makes the grass much sooner ready to cut than it would be, should this very inconsiderable expence be grudged: I call the expence inconsiderable, because, were not my horses employed in this work, after my first crop is inned, they would probably stand idle, unless I chose to send carts empty to London for dung, which I sometimes do.

I must, however, before I conclude, observe, that when I stack my hay undermade, with an intent that it should be mow-burnt, I am forced to watch it constantly, to see
that

that it does not heat too much, so as either to rot or fire; and I easily know the state it is in, by first running my arm, as far as I can, into the stack, and afterwards a pole, or hedge-stake, a few feet long: if I find it inclinable to be too hot, I make more vents for the air, by thrusting it through the stack in various places; but if this remedy is not sufficient, and the weather is not rainy, I generally employ a number of hands, who unmake the stack and make it up again afresh: and this always answers, as it cannot settle so close as it did at first; therefore the cool air has a freer passage. I am,

GENTLEMEN,

Your humble servant,

Near Epping, Essex,

A FARMER.

May 10, 1764.

N U M B E R LXXII.

A Letter from a Vale Farmer to the Editors, on the Disadvantages of plowing in Stubble.

GENTLEMEN,

I Have seen, in your collection, several arguments for and against plowing in wheat stubble. I shall not presume to give you my opinion on this subject; but in order to explain it a little, I will venture, in a short compass, to describe to you our practice.

We are far from being advocates for plowing in stubble; yet our land is not light, but the contrary; and bears as good crops of wheat as any in the kingdom.

As our soil is not light, it agrees very well with horse-beans, which we frequently sow after wheat; but if ever we let the stubble remain uncut till bean-season, and plow it in, the consequences are surely fatal; it causes the earth to lie hollow; the bean plants to fall down; the sun and air get at the roots, and prevent the plant thriving; and

and the crop is always very greatly lessened : besides, the stubble, which with us is very strong, clogs the plow-share, and gathers up in clods, which are a sure and a fatal shelter for many noxious insects.

These facts, which every vale-farmer is well acquainted with, induce us *always* to mow our stubbles, which we apply to many and various uses : if it is long, it serves very well for thatching : we litter our yards, stables, and cow-houses with it for making dung ; we use it for drying malt ; and a great deal is burnt by the poor cottagers, for warming themselves in winter, dressing their victuals, baking, brewing, &c.

These, gentlemen, are facts, not arguments * : the first, my memory and experience enable me to send you ; the last, I might possibly be deficient in, as I had not an university education. I have been, for many months,

GENTLEMEN,

Your reader and admirer,

Near Aylesbury, Bucks,

May 4, 1764.

A VALE FARMER.

* We should be glad if this honest farmer would favour us frequently with his letters, as *one fact is worth a dozen arguments*, particularly in what relates to agriculture. N.



Museum Rusticum, &c.

For J U N E, 1764.

VOLUME the SECOND.

N U M B E R LXXIII.

A Letter to the Editors, containing some valuable Experiments and Observations in the Art of Bleaching.

GENTLEMEN,

YOUR collection serving as a record of sketches for improvements, without the regular form of a treatise, or essay, I send you some unconnected thoughts on bleaching.

The experiments mentioned in them were made before Dr. Home's most ingenious and accurate performance on that subject appeared; and being on somewhat of a different principle, they may, perhaps, afford hints to those who have opportunities of prosecuting that subject*.

VOL. II. No. 10.

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* We cannot enough thank this correspondent for the favour of his letter: we hope to hear often from him, and that other manufacturers will follow his laudable example, by communicating to us, for the good of the public, the observations they have from time to time made in their respective branches, as we flatter ourselves, that it would tend greatly to the improvement of many valuable departments of trade. A. E.

Though there is not, perhaps, one article of greater importance to the goodness of flax, than the proper manner of *watering the lint*, I do not know of any experiments which ascertain the best method of performing it.

The purpose of watering lint is, by means of a due degree of putrefaction, to destroy the succulent tender fibres, which cover the flax, and connect it with the reed.

The time necessary to bring on this due degree of putrefaction depends greatly on the weather, especially as to heat and cold; and the degree should be proportioned to the age or strength of the lint. Thus the degree necessary for lint pulled before it is ripe would not loosen the flax on lint which had stood till the seed was perfectly ripe; and the degree necessary in the latter case would destroy great part of the yet tender fibres in the first.

Considering the tenderness of the fine slender fibres of the flax, a very small encrease of the degree of putrefaction may do much hurt; not only as it may destroy the texture of the finest fibres of the flax, but also as it may so far corrupt, or vitiate, the *native oil* of the plant, (on which the duration of the flax depends) as that it may either be washed away in bleaching, or, as is the case in all putrid oils, be turned so black, that it is afterwards brought to a good colour with the greatest difficulty.

In order to avoid the uncertainties and inconveniencies attending the usual method of performing this operation, it is the practice in some countries to spread their lint on the grass, instead of watering it.

As the lint is pulled early in the autumn, when spread on the grass, and kept constantly wet, the grass soon springs up through it, and not only shelters it from drought, but keeps it in a kind of warm infusion, which soon brings on the degree of putrefaction proper to dissolve the cohesion of the parts necessary to be loosened, without vitiating the *native oil*, or even hurting the texture of the tender fine fibres of the flax.

The lint, thus spread, being easily come at, we may know, with great certainty, when the flax is sufficiently

ently loosened from all its adhering membranes, and from the reed.

Chemistry evinces what must be taken for granted here, *viz.* That there is in vegetables an oil, to which they chiefly owe their duration and stability, and which is separated from them with great difficulty; and that when vegetables are deprived of this oil, they easily moulder into dust, being more or less lasting, as they abound more or less with this oil.

It will be here proper to enquire, what effects the substances generally used in bleaching may be supposed to have on this oil in flax; and how far, in the present way of managing them, due care is taken not to destroy the oil, on the preservation of which the duration of linen so much depends.

The fixed alkaline salt of plants (*pot-ash*) is a substance much employed in bleaching. This may have taken its rise from the following observation.

Take two parcels of any vegetable, and boil one in water in which a fixed alkali is dissolved, and the other in water only, the water in which the alkali is will be much higher coloured than the other; therefore, concluded they, the alkali assists greatly in separating the impurities, or what else is necessary to be taken away, before the linen acquires its proper colour.

We may doubt the inference here drawn, because it will be found upon trial, that add an equal quantity of the alkali to the other water, in which the vegetable only was boiled, even after the vegetable boiled in it is taken out of it, the water will almost instantaneously become nearly as high coloured as the water in which the alkali was originally dissolved.

The high colour seems hence to be owing to the immediate effect of the alkali on the oil mixed with the water: its sharp points, perhaps, entering into, or uniting with, the oil, destroy its transparency, and thereby render the water less pervious to the rays of light, or, in other words, high coloured. Soap is an instance of the intimate union of

this salt with oil, in which the very nature of the oil seems to be lost.

There is in all vegetable bodies a native acid united with their oil, which, perhaps, tends to the long lasting of the subject. This acid must be destroyed by an alkali, which, entering in its place, destroys the tenacity of the oil. The too free use of it would hence seem hurtful; and appears more probable from the condition of, for instance, flax or linen boiled in a strong alkaline lye, for when dried they feel harsh and rough, to remedy which, it is found necessary in bleaching to steep the linen in mild oily substances, such as milk, cow dung, &c. which again restore a smooth surface.

Soap is the next substance used, in the most considerable quantity, in bleaching. By the woolly appearance on the surface of linen boiled in a strong solution of it, there may be reason to fear, that the oil in the soap, uniting with the native oil of the flax, may carry off some of the latter.

Though the use of lime is forbid in bleaching, I suspected that the hurt it had done might be owing to an injudicious use of it. Thus, when used in substance, it acts as an infinite number of the smallest knives, cutting the fibres of the flax whenever an external force presses them against each other: being of very minute particles, it is not easily washed out of the linen, where continuing of a calcarious nature, the use of it is detected by lemon juice.

Next to these, the influence of the water, dews, and air, seems to be the most relied upon. Water and air seem to be more peculiarly favourable to bleaching in the latter end of the spring, and in the beginning of the summer.

The reason of this may be, that the surface of the earth being locked up by the cold and frost during the winter, the mineral vapours are, as it were, imprisoned in its bowels; and those vapours, being set at liberty by the heat of the sun, as the spring advances, rise into the air in abundance.

The vegetable kingdom is at this season full of thin acid juices, part of which undoubtedly transpire, together with
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the watery exhalations then sent out by them. Neither animals nor vegetables yet putrefy in sufficient quantity to afford volatile alkali to counterbalance, or neutralize, these acid vapours.

That this vague acid in the air contributes considerably to the bleaching of linen, seems probable, because bleaching is carried on with less success in the autumn, when the great quantity of volatile alkali arising at that time from the almost infinite number of dead animals and putrid vegetables, soon reduces this acid to a neutral state.

Led by such reasoning, I attempted to imitate nature; in the use of a mild acid. All the mineral acids, as prepared by art, seemed too strong. As I could not conveniently procure a choice of vegetable acids, I made use of tartar: but as only a small quantity of tartar remains dissolved in water, unless it is rendered more soluble by the addition of a fixed alkali, I added to a solution of it in boiling water some pot-ash, but in so small a quantity as not to destroy its acid.

In this solution I put some flax, which I boiled in it next day; and after washing the flax, I put one half of it into the same kind of lye: it looked rather brighter upon being immersed therein. I put the other half into a solution of pot-ash: the water became immediately brown.

After standing in infusion for two days, I boiled each in its own lye. When both were washed clean, the flax boiled in the pot-ash had not so soft a feel, nor the bright shining colour, that the other had. I then boiled each separately in a strong solution of soap. I repeated these operations four times, when the flax, at first black and hard, became considerably whitened, and extremely soft. It stood the heckle much better than I expected; and the tow was as soft and fine almost as cotton, though the fibres remained of a good length.

My motive for using flax, instead of linen, in this experiment, was, to try whether the flax could be thus treated, and be afterwards dried, so as to bear the heckle; for if it could, many particles might be thus loosened from the flax,
which

which might otherwise have adhered even till it was spun and wove, but which would afterwards be lost in the bleaching, to the great weakening of the cloth.

I observed very little difference in the whiteness of the flax, after being boiled in a soap lye. This made me suspect, that scarce any other advantage arises from the use of soap in bleaching, than carrying off what was partly separated by the other lyes. Thus, in common use, it readily carries off any filth with which linen has been sullied; but if the linen is put in wear before it is sufficiently bleached, its being often washed, even boiled in soap during wear, does not whiten it nearly in proportion to the frequency of its being washed and boiled. The flax had always a woolliness on its surface, after being boiled in soap.

That I might with greater certainty ascertain the effects of pot-ash, lime-water, soap, and tartar, I divided a piece of unbleached linen into eight parts, weighed each exactly, numbered them, and kept a register of their degrees of whiteness, and loss of weight. I boiled each number constantly in its own lye, infusing it two or three days between each boiling in the lye, in which it was afterwards boiled.

After repeating these operations six times on each number, they appeared as follows.

No. I. In a solution of potash and cremor-tartar, as mentioned before, the linen had scarce lost any of its weight, and was considerably whitened.

No. II. In the same solution, but between each boiling, the linen was washed, and boiled in a solution of soap. A great deal of rubbing, and expence in soap, was necessary to raise a lather. This number was rather whiter than the former, but not proportioned to the expence. It had lost in the proportion of twenty grains in an ounce.

No. III. In a solution of cremor-tartar in lime water, so as to render it somewhat acid. This was nearly the same with Numb. I. rather whiter, and scarcely diminished in weight.

No. IV.

No. IV. In the same solution, and treated as Numb. II. and with like success.

No. V. In a solution of pot-ash in water. This was whiter than any of the former, but had lost in weight about fifty grains in an ounce.

No. VI. In the same solution, and treated as Numb. II. This was still whiter, and lost sixty grains.

No. VII. In lime-water. Whiter than Numb. V. and lost forty grains in an ounce.

No. VIII. In the same, and treated as Numb. II. In other respects as Numb. VI.

The four first numbers were considerably contracted in length and breadth, and felt rather stronger and thicker than before. The four last felt loose, so that the threads might be drawn out with ease. When compared with the former numbers, they appeared like the same cloth quite worn out, yet the threads were not rotten, nor proportionably weaker.

The loss of substance in the four last numbers was chiefly in the first, and partly in the second boiling. Does not this point out the importance of boiling the flax in some proper lye, by which the particles, thus lost, may be carried off before the flax is spun? The linen will be thereby rendered stronger, more durable, as well as more equal, and more pleasing to the eye.

The tow of the flax which I boiled might be applied to much better purposes than tow usually is; and the coarser cloth into which it is now worked might be made of hemp, which, being stronger, would answer the purpose better.

My business, at the time of making these experiments, necessarily confined me to the heart of this great city, in which there are so many fires constantly burning, that the air is always loaded with much smoaky matter. This matter falls thick in little particles called blacks, especially before rains, and with dews: I was therefore deprived of these means of bleaching.

Yours, &c.

N U M-

NUMBER LXXIV.

Remarks on Mowing of Wheat in the Wolds, Stacking of it, Tilling their Ground for it, &c. from the Rev. Mr. Comber to the Editors.

——— *Laudato ingentia rura :*

Exiguum colito. ——— ———

VIRG.

GENTLEMEN,

BEING desirous to give you as complete an account as possible of the mowing of wheat on the *wolds*, I have very lately made it my business to converse with some very sensible and experienced farmers, *born and bred* there; and have added some things relative to the management of wheat and wheat land, which I learned from them, and apprehend you willing to learn from me.

In the first place, I find that the farmers on the wolds have an advantage in mowing of wheat over us in general in this part of the North Riding; their soil being a finer loam, whereas ours is a stronger clay, in consequence whereof, their wheat straw is *finer and tenderer* by much than ours, and yields better to the scythe than ours would, which being stronger must cut harsher, and require more strength, and a scythe more frequently sharpened.

In the second place, I learn that the usual work of a good mower of wheat, in a commonly-good year, is full two acres, as they give great wages, begin soon, and end late.

Each mower has a gatherer; and a good binder will follow two gatherers. Hence it appears, that more work is done by fewer hands in the mowing of wheat on the wolds than in *France* (according to your correspondent Y. Z.) by the mowers; at the same time that each mower has fewer followers in *France* than on the wolds, *viz.* only one, who is called a *binder*, but must be understood to be *gatherer and binder* too, or else the expence of mowing in *France* is unfairly stated. See Vol. II. page 34.

This

This, however, is a very odd circumstance, since Mr. Y. Z. assures us, that the binders in *France* are children of twelve or fifteen years of age, old women, and weak men. Mr. Y. Z. will much oblige the public by giving an account of this odd circumstance, *viz.* Two children in *France* being able to *gather* and *bind* after two mowers, and three stout persons being only just able to do this work with us.

In the mean time I account for this difference by a supposal, that the crops in *France* are *much lighter* than ours; and then indeed the expence will be much greater with respect to the crop reaped. And if this supposal be agreeable to fact, as I dare say it is, it will follow, that we cannot conclude any thing absolutely in favour of the *French*, the *Hainault*, or *Brabant* scythes, as they may be very proper where used, but very improper for our much stronger crops.

I am the more persuaded, gentlemen, that this supposal is founded in fact, because Mr. Y. Z. says, that “a good reaper in *France* will cut six-tenths of an English acre in “a day,” (page 33.) whereas we usually allow three reapers to an acre, or one reaper to about three tenths, little more than half as much. Nor does Mr. Y. Z. inform us how these reapers in *France* are followed: he tells us, indeed, afterwards, (in the same page) that ten men in twenty days, or twenty men in ten days, will reap one hundred and twelve acres of wheat with the sickle, that is, not two men to an acre. Now if these do all the work of *gathering* and *binding*, the crop must be very thin; and if they do not, the expence of their followers should have been mentioned, and that of the followers of the mowers, to enable us to judge of the different expences.

In the third place, I learn that the mowers on the wolds find no inconvenience in mowing lands raised with high ridges, to carry off the wet.

They have usually what they call four-swathe lands, so that two mowers may take one side, and other two the other. Their swathe is about three yards. They use a

common strong grass-scythe, which has been used a little, to bring her to an edge.

One of your correspondents thought the ridges of lands an objection to mowing of wheat (Vol. I. page 21). I answered that objection in a former letter to you. Another of your correspondents thinks the high ridges of lands an advantage to mowers of wheat (see Vol. II. page 34). I cannot see this any more than the contrary.

In the fourth place, I learn that the wolds farmers harrow their lands so fine, that the surface is perfectly level, and the mowers often go within an inch of the ground.

In the fifth place, I am informed that their gatherers and binders in general find it very difficult to make handsome sheaves, the heads of the corn lying often contrary ways; and that when the corn is *laid* or *lodged* before harvest, by violent rains, &c. they use the sickle, as they did very generally the last season.

In the sixth place, I understand that a middling crop of wheat on an acre is one chaldron, (or four quarters, or thirty-two bushels) their bushel being perhaps somewhat better than the *Winchester* standard, as our bushel in this neighbourhood is considerably better.

In the seventh place, I am taught that they have so little grass, or weed, in their wheat, that though they mow it, it is usually fit for the stack in four days.

In the eighth place, I learn that their almost-only manure is what is made of their straw, and the folding of their sheep on the fallow.

Some gentlemen * have built lime-kilns, and given lime, burnt from their own stone, to their tenants; and this has been laid on in different quantities, but seems too hot for their soil. However, they own to me that they believe, that a *mixture* of *lime and straw manure*, or *lime and earth*, might do well; but having great success in their present management, they care not to change it. They some-
times

* Of this laudable number was the late — *Shaw*, Esq; owner of a great part of *Bainton*, on the wolds. COMB.

times sow hand manure, as pigeons dung, &c. but this in no great quantities.

In the ninth place, the wolds farmers plough their fallows for wheat four times. The first ploughing is betwixt Candlemas and Lady-day; and the main difference betwixt the management of farmers on the *high* and *low* wolds is, that the former only *slightly plough*, or *ripple*, their fallows the first year, setting in their plough at a great distance from its last track; the latter plough their fallows as well *at first* as ever.

The second ploughing is betwixt Lady-day and May-day. They lead out their fold-garth manure, and *scale*, or spread it immediately from the waggon, and then follow with the plough.

Having finished their barley seed time, they begin instantly with their third ploughing: and when I told them, that I thought they gave not the manure time enough to mellow with the earth ploughed on to it; they answered, that if they gave it more time, the thistles, their main enemy, would get too great head. If a man's *ardors* (or *earings*) be considerable, he will not finish before *July*.

The last ploughing is what precedes sowing. The farmers on the low wolds have their wheat lands in such fine order, that they verily believe that none can excel them; and, indeed, their circumstances considered, *few* or *none* can.

In the tenth place, though they breed great numbers of oxen to eat their straw, and create manure, they plough entirely with horses. When I expressed my wonder at this, I was answered, that an ox-draught was too slow for them. They can plough an acre and a half, or two acres, in a day.

Their oxen lead out their manures, and lead in their corn, and do nothing else. Their roads are so bad that they cannot carry out their corn to market in waggons, but on horse-back. But if good roads were once made, though at considerable expence, their oxen would become far more valuable, as they would do more work, and the expence of working their land be much less; horses with them seldom giving much money, and being kept better than

oxen require. If oxen be a slower draught, they might afford to have two draughts going at once.

In the last place, I learn that they raise their corn stacks upon bearers of wood laid across two walls, about six or eight foot in height, and about three foot in breadth at the bottom. These walls are of an uncommon construction, being composed of alternate lays of *clay* and *straw*, though the *latter* much less considerable than the *former*. These, with a little occasional repairs, will last above forty years: however, they sometimes come down, with great loss of corn above, and of cattle underneath them. These walls also harbour rats in great numbers: but their want of proper stone near hand occasions the continuation of them. However, a *Staffordshire* farmer, lately come among them, has raised pillars of brick, covered with flags, for a support of their stacks; and they seem somewhat disposed to follow his example.

This sensible people are well convinced of the waste of straw, the source of their manure, which thatching of houses occasions; and also what harbour such covering gives to rats and mice; and their new buildings are all covered with tile, though this among them is a bad commodity.

If the society for encouragement of arts, &c. send for mowers of wheat from the wolds, I shall esteem it an honour to receive and execute their commands; and am, to them and you,

GENTLEMEN,

East Newton,
April 16, 1764.

An humble servant,

THOMAS COMBER, jun*.

P. S. As I shall probably never write more to you upon the subject of wheat, my favourite crop, I would here remark,

* We cannot enough thank Mr. Comber for the above very valuable piece, and could wish our other correspondents would follow his laudable example, and send us accounts of the state of agriculture in their respective neighbourhoods. The common methods of husbandry can by no means be so much improved as by a communication of knowledge, founded on experience, from one part of the kingdom to another; and to answer this desirable purpose is our work calculated. E.

mark, that great judgment is required to know when it should be sown *under*, and when *above furrow*, as the former method would, in some places, *bury*, and in the latter *starve* it.

April 18, 1764.

NUMBER LXXV.

Reflections on newly-proposed Methods of Stacking of Wheat, and of preventing the Smut in Wheat; with Cautions relative to Managing of Wheat in the Field in a wet Season; Feeding of it down with Sheep; and Sowing of Wheat too thick. With a Postscript, about the amazing Usefulness of Pigeons to procure good Crops of Wheat. From the same Gentleman.

GENTLEMEN,

I Was much pleased with the titles of two pieces in the first publication towards your Second Volume, as one promised a *preservative against rain* when wheat is gathered; and the other, a cure of that enemy to the fineness of wheat flour, *smut*. But on perusal of the pieces, I am afraid that neither of them can be depended on as very efficacious, at least, as not attended with great inconveniencies.

It may seem immaterial, whether we call your correspondent Y. Z's method of preserving gathered wheat from rain, with him, *stacking*, or, as seems much more proper, *shocking*, or *stooking*: yet there is indeed a very material difference; for *shocking*, or *stooking*; is only a *temporary* preservative, yet of the utmost consequence in a rainy or uncertain season. And as the common methods of stacking are found sufficient preservatives against rain, if your correspondent has given us an unexceptionable method of *shocking*, or *stooking*, I think he has given us more than he promised. But I am much afraid this is not the case.

He

He assures us, indeed, (page 35) that the proposed method will preserve wheat, without *any danger* from the inclemency of the weather, for two months in the field. Now, as the two months succeeding wheat harvest are *always very busy* ones for the farmer, and *often very wet*, if this assertion be well founded in fact, it is a great acquisition to agriculture. But as we *know* nothing of the fact, gentlemen, before we try so dangerous an experiment as may ruin a great part of a fine crop of wheat, we must examine it on the foot of reason and probability; and compare it with the present established method.

As your correspondent's description of the new method is very short, I will give it in his own words, especially as the Number containing his description may not be at the hand of every reader of this letter, which is hardly intelligible without it.

“ They set one sheaf upright, with the ears uppermost;
 “ and round that they place *a circle* of *many* other sheaves,
 “ with the ears uppermost, inclining on the first sheaf. Then
 “ they lay an horizontal circle of sheaves, with all the ears
 “ in the centre, and they cover those ears in the middle
 “ with a *loose sheaf* or two.”

It is to be wished that your correspondent had been more particular in his account. He does not tell us whether this stack, as he calls it, is made *immediately* after the wheat is gathered, or after it has had field room in some other manner, though this circumstance is very material towards a right judgment of its *usefulness*, and even of the *expedition*. He does not tell us, whether by a circle of *many other* sheaves he means a circle of one row of sheaves, or of more, though this circumstance too is very material.

I will now give a *short*, but, I hope, *sufficient* description of the method of stooking used in *Yorkshire*, &c.

“ Ten sheaves are disposed in two rows, each row leaning
 “ against the other: then two sheaves are laid on the top,
 “ so as to meet at the centre with their tails, and to slope
 “ downwards.”

Now

Now to compare the methods, I must observe, First, that in your correspondent's the sheaves appear to be set so close as to exclude a free course of air, most essential to *give, preserve, or restore*, dryness to corn; whereas in ours, the air has a free course, whether it bear against one or other end of the stook, or even against either side of it.

Secondly, in your correspondent's method, only *some loose* ears are laid as a cover to the whole stook; and those cannot reasonably be supposed long to resist the beating of the rain, but to transmit it to all, or many of the ears below them, which they are supposed to cover: and if we consider what violent winds often visit us *in*, and *soon after*, the harvest, we shall readily allow, that these loose ears may reasonably be expected to be blown off, and become no cover; nay, to be *blown about and away*, and often *totally lost*; whereas, in our method, the closeness and weight of two of the best sheaves in the twelve may reasonably be supposed to be a good cover, and to continue so, and hardly to be *blown off* by any wind, if carefully laid on; at least, not to be *blown away*, but so as soon to be replaced.

Thirdly, the flat position of your correspondent's cover, must make it liable extremely to receive all the rain that descends, and transmit it to what lies beneath; whereas the sloping position of our *cap* sheaves neither exposes them to *receive directly*, nor to *retain*, nor *transmit* the rain to the corn below, but to throw it off, especially as the tails of the sheaves, in which the straw is thickest and strongest, receive the most of the rain, which can do them little or no harm, and especially if the tails of these sheaves be thrust closely together. In short, gentlemen, your correspondent's method seems to threaten that dreadful malady, *mow-burn*, whilst ours gives the corn all possible guard against it, *viz.* access of sun and wind.

It is of great consequence, gentlemen, to the public, as well as individuals, to guard against every species of destruction to so valuable a crop as wheat is, in every stage, but more especially in its last, in which almost all the expence is over: therefore, Mr. Y. Z's assertion, that his method of stacking

is adopted in *Suffex, Surry, Kent*, and many other southern counties, made me more solicitous to examine it; and since, on a fair comparison with our *Yorkshire* method, it appears to have every disadvantage, I persuade myself I am doing my duty to my country by shewing to many counties a much better method than that which they have adopted.

Your nameless correspondent in Vol. II. Numb. IV. page 20, lays down a *theory* of *smut*, which may, gentlemen, be *ingenious*, but is surely *very precarious*.

That *too long a detention* of the ear in the hose, and the plant's *natural humidity*, occasion a fermentation, which destroys all the small vessels by which the corn receives nourishment; that the contents hence become *black, dry, and dusty*; that these imbibe moisture to make them burst the skin; that *becoming dry again*, they yet retain fiery poison enough to scorch and infect the sound corn by the blossom, are mere suppositions, which many philosophers will not admit.

“*Frustra fit per plura quod fiat per pauciora*,” is an allowed axiom of sound philosophy. Why then, gentlemen, should we not rather suppose the smutty ears to be infected *directly* by *fiery mineral* particles rising from the earth into the air, than adopt your nameless correspondent's *round-about* method? But if we do so, we can pay no regard to his *practical cure*.

He does not tell us, that he has tried the experiment of gathering the *blighted ears*, and found it succeed, by his preventing all smut in his crop. He seems rather to recommend it on the foot of probability; whereas he ought to have told us all the circumstances of the experiment, if he had made it; and it is *natural* to believe, that he would have related the experiment if made. But I must further tell this gentleman, that if he had gathered the *blighted ears*, and had no smut in his corn that year, he could not rightly conclude from this experiment, even though repeated with success, that he had found the true cause; for rains, &c. might prevent the smut. However, if gathering
ing

ing the blighted ears in one flat of wheat, and leaving them in another in the same year, in circumstances seeming equal, may evince the gathering of these blighted ears to be a *practical cure*, and consequently well worth the labour, yet we must enquire further, whether it can be conducted without such inconveniencies as over-balance the advantage.

He orders some person to go along every furrow, and with his hand break off, and carry away in a bag, every blighted ear when just spindled.

Now a person going up a furrow cannot surely with his hand reach many of the blighted ears towards the middle of the land. He must then, to execute your nameless correspondent's scheme, go among the spindled corn; and how much mischief he must do by thus going amongst it, cannot be ascertained, but appears likely to be so great, that the *remedy* may be worse than the *disease*.

I must now, gentlemen, mention some cautions with regard to the management of corn whilst it stands in the field.

If the wheat be fully ripe when cutten, and not full of grass or weeds, it will require very little field-room, especially if it be put into a barn, and that have proper air-holes; so that the first caution should be, to stack wheat as soon as ever it can be stacked with safety.

The second caution may be, to leave the *cap*, or *top* sheaves, to receive the benefit of the sun and air all the day, while we lead the rest to the barn or stack.

The third is, if the weather has been very wet, whilst the corn had field-room, to loose the bands of such sheaves as have received most damage, especially of the cap sheaves, and open them to the *sun* and *air* before they be led. By this means, with a little trouble, the least-dry may be separated from the better corn, and stacked by itself.

I think, gentlemen, the only means of improving our *method* of stooking to as great perfection as the nature of the thing admits, is, to find out a *cheap* and *ready* way of

connecting the two cap sheaves, which, in the present course, sometimes fall off by the weight of the ears, and occasion great loss in the flock.

I think it no difficulty to find such, and dare say *several* ways will suggest themselves so readily, that I need not suggest one or two which just now offer themselves to me.

The feeding of sheep in spring on the fields of wheat is considered by many sensible farmers as a *problematical practice*, which can be rightly determined only by an accurate examination of all circumstances.

If the wheat be not *luxuriant*, or not *well-rooted*; if the sheep be turned on to it in too great numbers, or suffered to stay too long; if dry weather for a considerable time succeed the feeding, the crop may *suffer greatly*, and in contrary circumstances may be benefited by the sheep, especially as their feet will settle the clods, if crumbly, about the roots, and their dung, urine, and even lying, warm and enrich the soil.

I apprehend, gentlemen, that sowing of much seed on wheat land is a very general fault of farmers, and their notion that this thick sowing prevents the weeds, often a great mistake. The thicker the young plants are, the weaker, and the more power the weeds will have to overtop the corn.

A plant of wheat requires so much nourishment to fill well all the ears which may spring from it, that it demands a considerable circumference of soil for its support; and weeds may be probably prevented by good tillage before the sowing, or, at least, by care afterwards; nor can I believe the horse-hoeing husbandry so applicable to any crop as this *noblest*.

I am, GENTLEMEN,

East-Newton,

Your constant correspondent,

April 14, 1764.

THOMAS COMBER, jun.

P.S. Yesterday a gentleman, near eighty, told me a story, which so plainly proves the *amazing usefulness* of pigeons,

pigeons, not only by their *dung*, but even by their devouring faculty, to produce a good wheat crop in some places, that I must think it well worth a record in your *Museum*.

Above forty years ago this gentleman coming to *Tuxford*, in *Nottinghamshire*, in his way to, or from, *London*, asked the master of the inn if he had not a pigeon-pye, as usual in that season; *Tuxford* being as famous for pigeons as for a strong clay, and its produce, wheat. The landlord answered, that the farmers being persuaded that every pigeon eats a load of corn in a year, had agreed to destroy their *courts*. “But,” added he, “we find, that without “pigeons we can grow no corn, and must re-people our “*courts* with all possible expedition.” The gentleman being curious to know the reason, the landlord continued, “Our soil is so full of the seeds of *ketlocks*, that they “now overshoot and destroy our corn, and we find by experience that our pigeons preferred these seeds to any corn “whatever; and that in destroying of our pigeons we have “run a great risque to destroy ourselves.”

’Tis highly probable, that the seeds of many other weeds are in like manner preferred by pigeons to any corn, just as cats prefer the flesh of mice to any other, and that in many places we should have much better crops of wheat, &c. if we encouraged pigeons more.

It is worth the while to try in what degree pigeons are fond of several seeds of weeds*; and in particular, how they stand affected to the seed of *mellilot*, which gives so disagreeable a taste to the finest wheat, as to render it in a manner uneatable, at the same time that it is so small as scarcely to be separated from the corn. By the bye, how cautious, gentlemen, should the farmer be, lest, in buying of seed wheat, he buy the seeds of weeds, which may cost him endless pains to eradicate? I would advise every one,

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before

* We recommend this matter to the consideration of our ingenious correspondents. E.

before he sows any wheat, to use some of it in puddings, &c. as well as in bread, and to engage some person of exquisite taste to give his opinion.

April 17, 1764.

NUMBER LXXVI.

Reflections on Wheat, as to Mowing, Binding, and Shocking, of it. From the same Correspondent.

GENTLEMEN,

AS wheat is a most valuable crop, I shall add a few miscellaneous reflections upon it.

I. In note* on page 94 of your last month's publication, you refer to a method of *stacking*, or *stooking*, corn in the field, to be found in page 35 of your Second Volume; but I have already sent you (see the preceding letter) a fair examination of this method, by which it will appear a very dangerous one.

II. Your correspondent, *An old Essex Farmer*, (in Numb. XXXIII. page 107, of your last month's publication) calls the *shocking*, or *stooking*, in the common method, with cap sheaves, a *very dangerous* method. This I have, I think, shewn to be the best yet *invented*; and nothing which this gentleman has advanced induces me to think it dangerous.

Indeed he owns, that "If the sheaves were dry when the traves were set up from an expectation of its raining, it is of great service; but if the sheaves are first suffered to be wet, ten to one but the corn *sweats*, *sprouts*, and *rots*, by being so close confined from the action of the air." Now this method of shocking, as I have shewn in the paper above referred to, gives the freest course to the air of any that has been thought of; nor does it appear, that any can be invented, in which the corn is so little confined, or so well preserved in the field from wet. That degree

degree of wet which will happen in a rainy season to corn thus shocked seems unavoidable.

III. There seems to be one difference betwixt the methods of shocking censured by your correspondent, and recommended by me, *viz.* That he supposes six sheaves on a side, and two to cap them; whereas I only suppose five on each side, so that the two cap sheaves will fully cover all the rest.

IV. It is surprising that your experienced correspondent, after he has owned that capping the sheaves when dry is of *great service*, should add, “After all, I am apt to think that it is *full as well* not to cap the shocks; for if the rain is not *very heavy* and *constant* indeed, the ears, provided they do not touch the ground, will dry *nearly as fast* as they are wetted.” You see, gentlemen, that your correspondent supposes, that if the rain is not *very heavy* and *constant*, yet the ears will dry *only nearly* as fast as they are wetted; consequently that they will be *wetter* than if they were covered, and consequently cannot be *full as well* as if they were covered.

The plain truth is, though the rain be not *very heavy* and *constant*, yet much of it will sink into the shocks if uncovered, far below their surface, and indeed below the power of the action of sun and wind.

If this were not the case, can your correspondent teach his readers to predict when the rain will not be *very heavy* and *constant*? Surely no. What then must come of those farmers, who, persuaded by him, that if the rain be not *very heavy* and *constant*, their uncovered shocks will be *little worse*, leave them uncovered when the rains prove *very heavy* and *constant*?

V. As to his method of unbinding sheaves much wetted, spreading and drying them by the sun, I have recommended it in the paper above mentioned: only here I must observe, that in *my* method scarcely any but the cap sheaves will want this assistance; whereas in *his* all the sheaves, being equally uncovered, will equally want it; and a
piece

piece of always *tedious*, and *often impracticable* labour it will prove.

VI. If your correspondent's method, of drying on a malt-kiln ears of wheat much wetted, will render it *nearly*, and sometimes *quite as good* as if it had suffered no rain, it is an useful discovery, for which he certainly deserves the thanks of the public. But two great abatements of its usefulness offer themselves: one is, that this drying appears to be a *very critical* operation, as a *too quick*, or *too-long-continued* fire may spoil the *taste*, if not the *substance*, of the corn: and the other is still worse, *viz.* That however skilful an operator may be, few farmers can either have malt-kilns of their own, or procure those of others for this operation, without a very great expence.

VII. One of you, gentlemen, thinks that the foreign method of mowing of wheat has the advantage over ours, in case the corn be weedy, because then it may be necessary to let it lie in wads two or three days without binding, and then more than one attendant on each mower would be unnecessary. (See your note * on page 95 of your Second Volume.) I must be allowed with candour to reflect on this note, that this matter is not *so certain* as you apprehend it. The more weeds there are in corn, the more it will *sweat*, &c. if rain fall upon it when cutten; and, therefore, though I allow that corn will require more field-room in proportion to the weeds it has mingled with it, I cannot allow that it is always prudent to give it this field-room in wads. When there is a *moral certainty* of fair weather for two or three days, and the corn is very weedy, I would indeed advise rather to let it lie exposed to sun and wind than immediately to bind it; otherwise, I would have it stooked in the manner recommended in my paper above mentioned, for thus it will have a free course of air to dry the weeds, and be in a great measure preserved from rain.

VIII. However, even in the case of the corn's being very weedy, and the weather very fine, there is a method
of

managing it preferable either to immediate binding or leaving it exposed two or three days to the chance of rain; and this is, to employ persons to follow the mower, and shake or gather out, *at leastwise*, all the large weeds; for these certainly, by their sweat in the mow or stack, greatly prejudice the *colour*, and probably the *taste* of the wheat; and these weeds raked together will easily become manure for the soil which produced them *.

IX. In a paper addressed to you, gentlemen, (see No. LXXIV. of this Volume) I have shewn, that in all probability the smaller attendance required by foreign mowers of wheat is occasioned by the greater thinness of their crops, certainly from the less quantity which they mow; so that no conclusion in favour of the *foreign* method of mowing of wheat, compared with our *domestic*, can be fairly deduced from the less attendance supposed to be required by the former.

X. And here, gentlemen, let me ask, why to the copy of the certificate of the effects of mowing wheat with the *Hainault* scythe, published in your *Museum* for last month, we have only the initials of names? If people design by their certificate to give credit to a fact, they should surely give their names; and initials are no names. I will forbear to ask such questions on this occasion as the subject *naturally* suggests. The best we can say of it is, that such *sinking* of names was an instance of *false modesty* in the persons signing, if they insisted that only the initials should be published, or of the person, who, in order to this publication, thus *curtailed* them.

XI. I am astonished at one assertion of the *Northamptonshire* farmers in this certificate, *viz.* That when they thresh their wheat, they *untie* not the sheaf.

Every

* We would recommend it to our readers to be very cautious how they use weeds as a manure, though they may seem thoroughly rotted; for if they have stood till the seeds of them are perfected in the vessels, they seldom fail producing a plentiful crop of their several kinds in the land on which they are laid. R.

Every one knows, that while the sheaf remains tied, the ears which lie nearer the floor are as a soft bed to the ears which lie in the midst of the sheaf, so that much corn about the middle of the sheaf will remain unthreshed, though the sheaf be turned*.

This is a fact so well known, that when farmers would make their *worse corn* good provender, they lay down the sheaves tied, and strike them on each side, and then give them to their cattle. But who would think of being thus wasteful of so valuable a crop as that of wheat? It is surprising that these farmers should be *thus wasteful*: and it is as surprising why they should mention this practice here; for they are arguing to prove, that the straw is better for thatch when *mown*, than when *cut* with the sickle (as it certainly is); and the circumstance of not untying the sheaf has nothing to do with this, as it is no way connected with either method of reaping. Only I must add, that the *worse threshed* the corn is, the worse for thatching is the straw; as every grain which remains in the sheaf when it is wetted for thatching will sprout suddenly, and cause the cover of the house to rot. And here, by the bye, let me exhort the farmer to be very cautious how he lets his corn to thresh by the great, especially his wheat and rye; for unless his thresher is very honest, he will be tempted to improve his wages by threshing the sheaves ill, as he well knows that he gets out much more corn at the first stroke at a sheaf,

* We must observe, that within twenty miles round *London*, nothing is more common than to thresh wheat sheaves without unbinding them; and the reason for this practice is, that the straw is in this method preserved in a more saleable condition, in order to be sent to the *London* market, where many thousand loads are sold in a year at a high price, to serve as litter for horses, and if the trusses were not handsome, the price of the load of straw would in proportion abate. As to the small quantities of corn that are in this method left in the ear, the farmer thinks it not worth his consideration; and in fact it is but little; for in the rich lands round the metropolis there are very few stinted or under ears, so that when they come to be threshed, they nearly all lie at the end of the sheaf, exposed to the flail, the straws being mostly of one length. R.

sheaf, than at two afterwards. He who does let his corn by the great to thresh, had need to examine the straw, or he will be a great loser of corn, and the unsuspicious buyer of his straw, of a good covering. I have heard of prudent people who have threshed again the straw they bought, and been well paid for their labour, both by the corn they gained, and the improved condition of the straw for thatch.

XII. One of you, gentlemen, has, in note † to page 94 of your Second Volume, suggested an ingenious method of preventing the inconveniencies of *too large* and *bursting* sheaves: but, if you consider the matter well, you will find that this expedient is not really adequate to the inconvenience to be removed.

The binder must take the quantity which his respective mower cuts. If he is hurried, he will be obliged to take every method of expedition. It is obvious, that the fewer sheaves he has to make, the quicker he will dispatch his work. He will, therefore, thrust all that ever he can into every band; and therefore the shorter the bands are made, by your proposals, the *more necessitated* he will find himself to thrust whatever he can into one sheaf, and the more danger there will be of the sheaf's bursting.

If a moderate quantity is put into the band, this will be strong enough to hold its contents, though the parts of it be united close to the ears; for the band seldom breaks there, unless it be made of too small a quantity, or of corn much tendered. But the band bursts usually where it is twisted round the sheaf, and therefore the making the band shorter will be a temptation to the binder to leave it too short to tie close enough; so that the only effectual method, gentlemen, to prevent *too large* and *ill-bound* sheaves, is, to allow the mowers sufficient binders; and, indeed, the loss of a few *bursten* or ill-dried sheaves is always more than the expence of one additional binder to a number of mowers. I am, GENTLEMEN,

East-Newton, Your candid correspondent, and servant,

May 19, 1764.

THOMAS COMBER, *Junior*.

P. S. I intend, if I have life and health, and can attend a great *rape-shearing* in this constabulary this summer, to give you an account of it*, that you may see what difference there is betwixt our method of reaping it, and that of your correspondent in your *Museum* for the last month. (See page 79 of this volume.)

Pray amend the following errata in my letters. In Vol. I. page 441, line 26, the word *and*, betwixt the words *these* and *several*, is omitted. In Vol. II. page 97, line 10, the point ; which stands after *state*, should stand after *farmer*. In page 101, line 31, for *thin* read *shrink*.

NUMBER LXXVII.

Observations on some Premiums proposed by the Society for Encouragement of Arts, &c. for Improvements in Agriculture; and another very remarkable Premium never determined. Contained in a Letter from the same Gentleman to the Editors.

GENTLEMEN,

AS you are members of the society for encouragement of arts, &c. it cannot be improper to address to you observations on some of their premiums proposed for improvements in agriculture.

I am glad to see them continue to propose premiums for the advancement of the science of cultivation of the earth, as all improvements in *arts, manufactures, and commerce*, must have their support in the fruits of the earth.

Whether

* The account of the *rape-shearing* from this ingenious gentleman will give us singular pleasure, and we have not the least doubt of its being very useful to our readers. We hope Mr. Comber will excuse our omitting a paragraph or two at the beginning of his letter; but as we are stinted for room to oblige our numerous correspondents, and the passages related more to us than the public, we thought we might venture to do it without offence. R.

Whether or no the premiums assigned to encourage improvements in agriculture be so considerable as to bear that proportion to the premiums assigned to encourage the fine arts, which care of the *foundation* should bear to care of the *superstructure*, I pretend not to determine; nor shall I here attempt any enquiry towards the determination. The subject is in itself very nice, and perhaps can hardly be determined with precision after much enquiry. I here intend only, gentlemen, to observe, that there are some circumstances attending the present set of premiums for advance of *agriculture*, which seem not to have been sufficiently considered to secure the effect proposed by them. The chief circumstance of this sort, which I would insist upon, is, the *shortness of time* allowed for persons to become candidates for some of these premiums.

For instance, it is confessed by all who write on the culture of *burnet*, that the success in a great measure depends on the care that is taken of the preparation of the earth with a *particular view* to this crop.

Mr. *Rocque*, to whom the candidates are directed for instructions in regard to its culture, has informed the public, that the earth should be *trenched*, and that by the middle of *May*, in order to be sown in the middle of *June*. (See page 460, and page 462, of your First Volume.) Now the publication of this premium appeared to us in the North for the first time the day before yesterday, the 20th of *May*.

Every body at all acquainted with husbandry knows, that at this season a *prudent* husbandman has determined, according to his circumstances of want of several grains, the manner in which he will employ his ground for the arable present year; and as no land is now unsown but that which is intended for *turneps*, *coleseed*, or *wheat*, and *rye*; and *turneps* are a preparative crop for *burnet*; (see Mr. *Rocque*, *ut sup.*) it is not probable that any body will give up the almost-certain prospect of so valuable a crop as that of rape, or hard corn, and begin to trench his land after the time directed by Mr. *Rocque*, for the very precarious pro-

spect of a reward for sowing the greatest quantity of ground with *burnet*.

Mr. *Rocque*, indeed, says, that *burnet* may be sowed as late as *August*, and consequently those who sow it then may become candidates for these premiums. But a reasonable man will consider, that it is not likely that his crop should be so good as if it was sown more early, and therefore will be discouraged from sowing *burnet* this year. By the account which Mr. *Rocque* gives (in page 308 of your First Volume) the *burnet* which is sown in *May* may be mown even for seed in *July*; and this is so great an advantage, which he who has resolved *timely* to sow *burnet* has over him who must sow it in consequence of the publication of these premiums, that it is still more probable, that the publication of them will not incline one person to sow *burnet* this year, who would not otherwise have sowed it; and yet it is most evident that the inducing people to sow it, who would not otherwise have sowed it, ought to be the only end of publishing these premiums.

If any member of the society was at my elbow whilst I write this, he would perhaps say, “You will see, sir, that the event will confute your reasonings; numbers will offer themselves candidates for these premiums.” To this I would answer, “I dare say, sir, they will.” Mr. *Rocque* has lately (*February* 16th) told us, (page 462 of Vol. I. of *Museum Rusticum*) that he has had such a demand for *burnet*-seed as to have none * left. These early buyers then will be the candidates, at least, in all probability, the only successful ones; and the prospect of their being so will probably deter all others from attempting to become such. On the whole, gentlemen, it seems natural to conclude, that

* As I would be far from deterring any person from trying to raise *burnet* this very year, I will not suggest that the probability of being disappointed on an application to Mr. *Rocque* for the seed ought to hinder persons from applying; but, from my knowledge of human nature, I conclude that this probability will have this effect. COME.

that the design of so late proposing premiums for the sowing of *burnet* in this year was not to allure more husbandmen to sow, but to reimburse the expence of the seed, &c. to such of the members of the society as had already sown, or were just about to sow, and had a moral certainty that the quantities they should sow would carry away the premiums.

As I look upon the institution of the society for encouraging of arts, &c. to be a great glory and advantage to the nation, I should be sorry to see its talents, &c. perverted to the *purposes* of *private interest* in opposition to *national*; and yet that this is the case sometimes, is too evident from the late contest betwixt the members of it, in which I wish them success who have the avowed designs of the society at heart.

Another circumstance of some of these newly-proposed premiums, which seems to want amendment, is the smallness of those assigned to the gathering of grass-seeds by hand.

The value of the time to be employed in gathering of them in so throng a season as the summer, is very considerable; and the harm which will be done to the meadows by people's treading of them, in order to gather the seeds, is still more so. The quantity to be gathered is large, *viz.* fifteen and twenty pounds weight of some of them; and those, of which smaller quantities are required, are, in proportion at least, scarcer.

The quantities, how large soever, which are gathered, are to be produced to the society, no certificates of the reality of the quantity being admitted. Now the expence of carrying up, and bringing down, for the gatherer's use, and attendance on the society, is not inconsiderable; and after all, what is the worst circumstance, and seems least reconcileable with such a generous spirit as should actuate the society, every successful candidate, however expensive his collection, must leave the quantity of seeds stipulated to entitle him to become a candidate, the fruit of his labour,

bour, &c. for the emolument of the members of the society.

I must add, gentlemen, that as the several sorts of seeds to be gathered in one meadow may reasonably be supposed to be ripe at very different times, not one trampling of the meadow will suffice, but several must be submitted to; and therefore the emolument should be proportionally greater.

In order to be entitled to the premium, the seeds must be gathered by hand, not only *clean*, but *ripe* and *perfect*. Now it is so very nice a matter to determine when a seed is *ripe* and *perfect*, that a man's diligence and expence may be disappointed of their reward by captious judges rejecting seeds as not *perfectly ripe*, &c. which nicety may bring his collection below the standard required. It is obviously, gentlemen, a work of nicety to distinguish the several sorts of grasses by help of the best *descriptions* and *drawings* which can be had (and these cannot be had without considerable expence); and as to the original grasses bearing seed, though they may be seen at the society's room in the *Strand*, yet how few, who would become candidates, can go thither to see them? Specimens surely should have been sent to the principal parts of the kingdom to be inspected by such as would become gatherers of the seeds. From all these considerations it seems evident, gentlemen, that few persons are qualified to become candidates for these premiums, and therefore the premiums should have been advanced much higher than the present ten pounds. A man qualified to gather these seeds required, must go into the meadows of others as well as his own, and he should be enabled to pay for the necessary damage he does.

I should think, gentlemen, that the time limited for delivery of accounts of the best methods of cultivating wheat, rye, &c. is also much too short, as experiments are to be made in the different ways of *broad-cast* and *drill*; and the knowledge being acquired, the instruments of the new husbandry are not *instantly* to be gotten, and fields cannot be disposed for the different experiments in a moment;

ment; yet must that wheat and rye be sown in a few months, of the proof of which an account is to be given in *November, 1765.*

I must, however, gentlemen, mention one remarkable premium never yet determined, (so far as the public knows) which seems to have failed of the proposed success merely for *want of time.*

An advertisement was published in *May* or *June*, some years ago, that the society would give a golden medal to the author of the best history of the *rise and progress of agriculture, manufactures, and commerce, in Great-Britain.* What time was required to turn over printed books, search records, listen to experiments, reflect on things, metho-dize materials, and form them into a connected history! Yet this history was to be delivered to the society at the end of the same summer. One would have been apt to conclude, that this premium was designed for some *favourite member*, who had his history *ready cut and dried.* But yet no such thing appears; for the author of the continuation of a *complete history of England* tells us gravely, that this *gold medal* was given by the society of arts, &c. but he is *too modest* to pretend to say to whom. I am afraid, on good credit, that one candidate, (who had laboured as hard as it was possible) together with his *history*, which he modestly called a *sketch*, sent to the society a representation of the impossibility of producing an history in the time prefixed, and desired his own papers might be sent to an eminent bookseller in *London*, that he might perfect them, being his only copy, but could never recover them, though he knows not by whose fault.

I am, GENTLEMEN,

East-Newton,
May 22, 1764.

Your frank correspondent,

THOMAS COMBER, Junr.

NUMBER LXXVIII.

A Letter from a Practiser of the celebrated Mr. Tull's Method of Husbandry to the Editors, respecting the Culture of Lucern.

GENTLEMEN,

A Few days ago I received your first Six Numbers of the *Museum Rusticum*, all which I have just gone through.

I perhaps may be liable to censure for saying, I wish the letters of your different correspondents had merit equal to the good intentions which, I am willing to believe, moved their authors to write them.

A work of this kind will certainly be useful in many particulars; but, if contradictory letters appear, the poor farmer, who is intended to be instructed, will be at a loss how to make his choice: and yet I fear that inconvenience will often arise, to the confusion of the farmer, whom you intend to instruct, and who is already sufficiently prejudiced against books, to the no small check of landed improvements.

There are many of your correspondents who shew their ingenuity and attention by the judicious observations they appear to have made: I wish they all wrote from the same fountain, and as sincerely, that I had leisure to point out some of their mistakes.

At present I shall confine myself to the letter No. LXXXI. page 339, Vol. I. The author of this letter, if he meant to furnish us with a panegyric upon Mr. Rocque, might have done it without contradicting first principles which will ever stand the test of experimental enquiries.

Mr. Miller will perhaps answer for himself. The superstition of the Romans in the cultivation of lucern, if we may believe tradition, renders their method unworthy the practice of the present æra. This gentleman, page 339,

OWNS

owns he is against innovations in husbandry, because it is difficult to bring the farmer from the old methods; and therefore seems to conclude, new ones are not to be attempted; at least, that seems to be his reason for being against what he calls innovations.

Under “*restrictions, &c.*” he approves of the new culture, but thinks it “preposterous to extend it to artificial “*grasses;*” adding, “the *only* benefit lucern can receive “from the horse-hoe, is, that it keeps down the natural “*grafs.*” This gentleman cannot be a practical cultivator of lucern; neither can he know the uses of the hoe-plough; if he did, he could not assert a fact so contradictory in itself!

To inaccurate observers the *seedling* plant of lucern may appear to have no lateral roots; but a careful examiner will find a great number of small ones, every one, or most, of which are furnished with fresh nutriment by the operation of the hoe-plough.

We shall not contend about Mr. Rocque’s superior profit: his situation gives him advantages superior to a distant residence; and therefore that should not be mentioned by a generous writer.

I am a favourer and practiser of the new husbandry; and I do deny that it will be more expensive than Mr. Rocque’s method, but, on the contrary, it will eventually be cheaper.

By his method he may, for a few years, have pretty good crops; but at length his plants will be found to dwindle, and his crops will lessen, unless he annually adds seed to the ground; whereas, in the new culture, the crop will be continually improving: as to the quality being inferior, that will be the fault of the owner, if he lets it grow too rank. This argument of your writer makes against himself, as thereby he admits the superior luxuriance of the plants cultivated by the horse-hoe.

I have sown lucern in broad-cast more than once, and have seen others do it; and it ever failed.

Mr. Rocque's rule, as this gentleman says, is, "that lucern will grow on any land, if not wet:" this is certainly premature: it surely must have the occupation of a dry, rich soil, or I am sure, from practice, it will not succeed; and as to "*the strongest being preferred,*" I believe every one, who tries the cultivation of it on such, and upon light ground, will find the latter best adapted to it.

But the notion of sowing corn with lucern is quite as "preposterous," I think, as the new culture for it; and how a man of Mr. Rocque's famed abilities should adopt such a method, I am at a loss to guess. Neither should lucern be sown in March, as in its *infant* state it is very tender, and timid of frost.

This gentleman says, "it is for want of knowing the nature of lucern, that *they* drill it." I might retort upon him; but his mistaken zeal, I fear, will more injure the cause he means to promote, than I hope it will discourage the practice of drilling this valuable plant, as, by all men who adhere to rational principles, that hath been found the most successful method. See Tull, Duhamel, &c. I should be glad to know what "the surface of the ground is to be spared" for: is it to give life to the natural grass, that common and destructive enemy of this excellent plant?

Our author mentions the cultivation of it in France, &c. If he was ever at Paris, with his present attention, he must have seen, that after a few years they always plough up the promiscuous-sown lucern, in order to prepare the ground again for that, or some other crop, when the lucern begins to dwindle by the weeds or natural grass robbing it of its nutriment.

How much more must that be the fate of promiscuous-sown lucern in these kingdoms, where he admits grass is apt to get a-head! That is not the case in France, and yet even there promiscuous-sown crops are short-lived.

I know not whether he be as conversant with potato-ground in Ireland as I am; but for your information, gentlemen,

lemen, in consequence of your note, page 344, I cannot omit to inform you the tillage will not do for lucern: for this plant the ground ought to be well pulverized; whereas, in the *general* potato-tillage of this kingdom, not more than about two feet in nine of the ground is cultivated*. See Mr. Irwin's account of potato-sowing, No. LXXXIII.

The manner of harrowing the lucern, practised by Mr. Rocque, although the teeth be round, must wound many of the roots: that might be well, as it would thin them; but repeated harrowing will, in time, wound them all; and notwithstanding they will afford grass afterwards, yet, when the winter rain comes on, lodgments of water will be made in those wounds, which will bring on putrefaction, to the destruction of the plants, unless Mr. Rocque has the art of conducting the harrow-pins always in the same direction: and, could that be the case, what would destroy the grass where they did not pass?

The manner of ploughing the lucern, practised by Mr. Rocque, is still approaching the horse-hoe, though by no means so effectual. I wonder to see our author even favour that, since it may be deemed an "*innovation*." This ploughing is to be repeated every year, and harrowing also: to this dung is to be added, "as often as may be." I am willing to believe this gentleman knows nothing of the expence which attends these operations, *i. e.* ploughing, harrowing, and, above all, dunging, besides the value of the dung, which would always be acceptable for other grounds; whereas, in the drill way of sowing lucern, when the land is once put in good order, it may ever be kept so by the hoe-plough.

N n 2

Lucern

* Some time hence, perhaps, I may trouble you on the subject of potatoes, so far as relates to this kingdom; by which I can clearly demonstrate, that where the ground requires dung, their propagation is a loss of many pounds an acre to the owner of the land, injurious to the community, and even the poor.—*The sooner this gentleman favours us with his account, we shall be the more obliged to him; and if he would also favour us with an account of the culture of bere in Ireland, he would still more merit our thanks. O.*

Lucern is a grass of such inestimable valuable, that it will answer almost any expence; yet, if the most certain method to obtain success shall be found the cheapest, there can be no reason for pursuing one more precarious and more expensive, which will be found when Mr. Rocque's method, or at least that so warmly recommended by your correspondent, who asserts it to be Mr. Rocque's, is compared in practice with the one I venture to recommend to the practice of my countrymen, which I take upon me to say will command success, if pursued.

The land should be a flexible loam, dry, deep, and rich, either by nature, or made so by art; not but it will succeed to admiration should a quarry be under*. It should be well pulverized by plough and harrow, laid as flat as possible, and cleared of all weeds, particularly scutch-grass: when the ground is in this form, let a small plough, with two mould-boards, be run up and down the field, at every three foot, upon the flat surface: this will completely form three-foot ridges. If a pair of drill-harrows be not at hand, let the crown of every ridge be carefully raked clean and even with an iron rake, and one row of seed drilled very thin, about half an inch deep, along the middle of every ridge, the middle or latter end of April, (the beginning of May may do) and be carefully covered. This sowing of the seed may be done by hand, if a drill-plough be not ready. By a master's attendance, a great deal may be done in a day.

Thus it may remain till weeds begin to appear, when the hoe plough, or a small common one, should take away every alternate side of the ridges, as near the lucern as can be
with

* Where lucern is planted upon a quarry, if the stone hath not many interstices, (into which the roots will make surprising passage) in that case the length of the roots will be impeded, and shoot out in horizontal fibres, which will bring home food in abundance to the plant, even from "the surface of the earth:" here the hoe-plough will be important. Some people have stoney ground and quarries: even they may have lucern.

with safety. (I go within two and three inches of my drilled crops.) In three or four days, return the mould to the former places with the plough, and then proceed to take off the other sides of the ridges in like manner, and return it as before.

If the ground be made in good condition before sowing, a crop may be mowed in July, the produce of which will surprise any one who is not acquainted with the plant.

In September it will be fit to cut again; but if in the intermediate time weeds should appear, let the hoeing be repeated: thus the weeds will be destroyed the first year.

After the second cutting, send in the plough again, and take off the sides of every ridge within about six inches of the plants, and so let them remain till February, when the plough should return the mould to every ridge; and in May the grass will be ready for cutting, and will continue to afford a crop every month during the summer.

The hoeing should be repeated, as before directed, as often as weeds appear; but observe never to horse-hoe it when the ground has any adhesion.

The hoeing before the winter is to keep the plants dry during that season, and to meliorate the soil of the alleys by the influence and mechanical operation of the winter frosts.

To keep my letter within reasonable compass, I have been short in my directions, but to practical farmers, I hope, sufficiently plain; if not, any necessary explanation I shall cheerfully furnish.

Your readers will please to observe, that after the first preparation of the ground, if they horse-hoe the crop regularly every year, the dung which Mr. Rocque's friend recommends (as it may be got easily at London) may be saved for other purposes, as by this method of managing lucern, the *crop* and *ground* will be improving every year.

I appeal then to every impartial judge, whether this method is not cheaper than the ploughing, harrowing, and
dunging,

dunging, so warmly recommended by your correspondent. It is almost unnecessary to urge, that a crop raised in this way will, ever after the first year, be equal, if not superior, to Mr. Rocque's, as the gentleman admits as large crops may be raised in the drill way.

I am a stranger to Mr. Rocque and his friend. I have no other motives in troubling you on this subject, than a public benefit to mankind, and a gratitude to the memory of Mr. Tull, whose superior ingenuity, I blush to own it, hath shone in France, to the reproach of Englishmen. And were we all to join in opinion with your correspondent, (who says, "It would be well were we to improve our "old practices, before we *even attempt* to bring the new "ones into general use") we should indiscriminately merit the pity of all nations for our perverseness. Perhaps, had Tull been a foreigner, his system would have been established amongst us long ago.

Another of your correspondents, page 270, says, "Things may be carried too far; and this was the case with "Mr. Tull, when, spinning out his principles to too great "a nicety, he sowed wheat so long on the same land "without manure, that he at last had scarce any crops at "all."

This *Silent Member's* reflection on Mr. Tull's speculation is, I think, pretty strong; but I should be glad to know how he will support his assertion. I wish gentlemen, who mean a public benefit, would consider well, before they publish, the cause they take in hand, and the people they are attempting to instruct. The hoe this gentleman describes is a faint imitation of the horse-hoe: yet there is great merit in *his* letter, and manliness in his ideas, save the above quotation.

It may be proper to inform you, gentlemen, that I am not a farmer in theory, but in practice, although I pursue it speculatively, in many cases, before I extend it.

I have now near thirty English acres under drilled wheat, and next year expect to have double that quantity.

Flax,

Flax, barley, turneps, cabbages, &c. I horse-hoe with great success; and if I find your *Museum* that unintimidated receptacle which I hope it will appear to be, by giving a place to the memory of the ingenious Tull, I shall perhaps be able to furnish you with some useful matter: but rest assured, nothing shall approach you from me, which does not arise from practice. Garreteer farmers are injurious to the cause they would be thought to promote; though, when the bookseller pleases, they carry their own point, as my shelves evince *. Impatient for your next Number,

I am, GENTLEMEN,

Ireland,

A friend to your work,

April 24, 1764.

AN ENGLISHMAN.

NUMBER LXXIX.

A Letter to the Editors, on the Necessity of breeding Colts from sound Stallions.

GENTLEMEN,

THAT useful animal, the horse, has very justly been the subject of several preceding pieces in your collection: for usefulness it deserves greatly our care, so as to procure it as perfect as in our power to do. This is the only part I shall now touch on, in order to contribute my observation towards attaining so desirable an end.

It is a pretty general rule, that beginning well is a likely means towards obtaining the desired end; but this maxim is too frequently unobserved with regard to the animal before us;

* This correspondent's letters will always be esteemed a favour; and he may depend on it, that nothing but the public good shall influence our conduct in this work. We should be greatly obliged to this gentleman if he would transmit us an account of his methods of practice in adapting the horse-hoeing husbandry to the several crops he cultivates that way, as it could not but greatly conduce to propagate the knowledge of a system which, properly adopted, would, we think, be of great use. O.

us; I mean, in the propagation of the species. It is true, a long pedigree of famous sires is much attended to; and frequently the achievements of the creature from which we propagate speak much in his praise, whether it be on the course, or in the field: these, added to a well-proportioned make, with respect to strength and size, induce many to look no farther, but conclude a colt from such illustrious family cannot fail to answer every desired end; and so, without any further thought, bring the mare to be covered by such horse: and many such are dispersed about the country, in the hands of inn-keepers, or jockeys, who can talk much about racing and hunting, and by publishing a high premium for a stint, make the horse in their possession very famous; when, rather than lose any grist which may come to mill, they will take a very trifle for a leap, or the stint; but then with this caution, *'Tis a favour to you, as a friend; but I must insist on its being kept secret.*

Now it is well known, that rarely any famous horse can fall into such hands, except he be deemed unfit for any further service on the turf, or in the chace, by being blind, having splints, spavins, ring-bones, broken wind, foundered, or some such chronical disease, which in its nature is liable to be communicated to his offspring; by which means he is become useless to his master, who frequently bestows the creature, thus disabled, as a gift to his groom, or jockey boy: these, well knowing the keeping such a horse will be little advantage, therefore sell him to the first who may bid any tolerable sum for him; whereby this (once) so famous (but now useless) creature becomes the property of some one of those men aforesaid, who have many tolerable-good mares brought to them by unthinking people; and by which means a considerable number of well-made colts are procured, and from whom the expectation of many are raised, but often greatly to their disappointment, or more often of those who have too eagerly purchased such colts while sucking; because those colts, we frequently see, have, at two, three, four, or five years old, splints on their legs, spavins on their joints, ring-bones in their pasterns, or are foundered

dered in their feet, at six years go blind with a cataract, and at seven become broken-winded, through the unproportioned make of the thorax and its contents; and are thereby rendered unfit for any service suitable to their make, but are put to mere drudgery, or condemned to die, unless it happens to be a mare; and then she frequently is turned out in some common, or on some poor land, just barely to get a living and breed a colt, which colt, it is an hundred to one, is begotten by an horse subject to some of the afore-said maladies: hence in their offspring we may, and often do, see these diseases complicated.

I need not say more on this subject, nor propose a remedy, because I think the judicious will easily see what means are likely to be most conducive to prevent this pernicious practice; but recommend the subject, through the channel of the *Museum Rusticum*, &c. to those most immediately concerned with the breeding horses.

RURICOLA GLOCESTRIS.
L.

NUMBER LXXX.

On the Culture of Potatoes, and Magazan Beans.

GENTLEMEN,

I Send you (as I promised) the true method of cultivating the potato.

The Irish purple is the best and sweetest sort, and forwardest; the middling size and brightest, the best seed, set whole.

Set some in February, March, and April, in a fine deep tilth, in any soil: in frost cover the first setting with litter or fern.

Set them six inches deep, in a kind of hillock, or like a mole-cast: (*Mark this.*)—They are now out of the ground, therefore it is too late to sow them. But observe this

method: carefully mould them up every month or fortnight, and there will be near a bushel under your hillock by July or August: be still moulding up as high as you can; therefore set your seed at first a yard distant square. The authors of *The Complete Body of Husbandry* knew not this method, and *The Complete Body of Gardening* takes no notice of this valuable root.

Mr. Millar is full, but wrong.

The white kidney sort, in loose ground, will run all into stringy roots; the pink-coloured forward sort will do very well, sown in the former manner; and the smallest potatoes are good seed, but these are often thrown to hogs.

Now the magazan bean, for man or horse, is as sweet as the Windsor.

Set some the latter end of November, and some in December, in loamy ground, in rows near a yard distant, pretty thick and deepish (four inches). In frost cover the rows with dung.

In January, February, and March, set some more, as before, but not so thick. (*Keep cats in your garden*) When your rows are too thin, plant some out of your thick rows; all to be four inches distant: mould them up, and use the Dutch hoe all the summer.

Now you will see the excellence of this bean. In the beginning of May your first-sown will blossom, though but half a foot high, and begin to blossom from the very bottom to the top, and so on, as they rise to a yard high; but they will be strong, and send three or four from one root: but be sure never top them; it will make the kids and beans small, though perhaps more in number; it is a bad way.

See the preference of this to the horse-bean: it runs all into straw in comparison, and is apt to break and blow down.

The former beans at harvest should be pulled as they ripen, if only few were sown, or, if many, the stalks pulled
up

up and set upright to dry: when dry, they may be split for horses; or for hogs they are excellent.

May 21, 1764.

Yours, &c.

N U M B E R LXXXI.

A Letter from Farmer White to the Editors, on the Benefit of spending Turneps whilst they are young.

GENTLEMEN,

I Beg leave, through the channel of you work, to convey a piece of intelligence to my brother farmers, which some of them may not be aware of.

I have known many, who intend feeding off their turneps with sheep, keep the turneps till they are too old to be applied with advantage to that use. Your readers may give me credit, for I speak from experience; and I can assure them, that one acre of young turneps is of more value for fattening sheep than two acres of old ones, as the wethers you turn in will get flesh and fat at least as fast again on the first as the last.

Let this maxim be treasured up in the farmer's memory; and let him not at any rate be tempted, for the sake of spending a few weeds and grass on his fallows, to keep his turneps till they are of little worth.

If any of your readers should be incredulous, let them try the experiment; it will be but little expence, and still less trouble. I did so myself before I adopted the practice, and was in a very short time convinced: this happened some years ago, and I have continued this method ever since.

I should now conclude, but I cannot in conscience do it without expressing my approbation of your undertaking: I am really of opinion that it will be of great use to the farming world, especially as you admit the thoughts of such plain men as myself; for it is a well-known fact, that a plain, honest, well-meaning farmer, though no great

scholar, may have many things treasured up in his *pericrane* well worth communicating; and such as have, may now communicate, as I have done, in the *Museum Rusticum*.

Borders of Suffolk,

Your old subscriber,

May 7, 1764.

JOHN WHITE.

NUMBER LXXXII.

To the Editors of the MUSEUM RUSTICUM.

GENTLEMEN,

YOUR work is as well calculated to be of use as any I know, and in this opinion I have been a purchaser since its first commencement.

I send you enclosed *a most excellent receipt for destroying those very troublesome domestic enemies called Bugs*, to which I hope you will afford a place in your next number.

It has, I am sensible, already appeared in some of the public prints; but that can be no objection to your inserting it, as great numbers of your readers may have no opportunity of seeing those papers which contain this receipt, which I the more readily send you, as I know it to be efficacious*.

I am, GENTLEMEN,

Your humble servant,

X. Y.

An efficacious Receipt for destroying Bugs, by an eminent Physician.

A physician communicates this well-experienced receipt for the destroying of bugs, with which he entirely cleared his own beds, &c. many years ago, and has told it scores of families since, who have all found the same effects by it, and never saw a bug afterwards.

Take

* Our great inducement for inserting this receipt, besides its evident utility, is our knowledge of the person who recommends it to our work. O.

Take of the highest rectified spirit of wine, (*viz.* lamp spirits) that will burn all away dry, and leave not the least moisture behind, half a pint; newly distilled oil, or spirit of turpentine, half a pint: mix them together, and break into it, in small bits, half an ounce of camphire, which will dissolve in it in a few minutes: shake them well together, and with a piece of sponge, or a brush dipped in some of it, wet very well the bed or furniture wherein those vermin harbour and breed; and it will infallibly kill and destroy both them and their nits, although they swarm ever so much: but then the bed or furniture must be well and thoroughly wet with it, (the dust upon them being first brushed and shook off) by which means it will neither stain, soil, nor in the least hurt the finest silk or damask bed. The quantity here ordered of this curious neat white mixture, (which costs little above a shilling) will rid any one bed whatsoever, though it swarms with bugs. Do but touch a live bug with a drop of it, and you will find it to die instantly. If any bug or bugs should happen to appear after once using it, it will only be for want of well wetting the lacing, &c. of the bed, or the foldings of the linings or curtains near the rings, or the joints or holes in and about the bed or head-board, wherein the bugs and nits nestle and breed; and then their being all well wet again with more of the same mixture, which dries in as fast as you use it, pouring some of it into the joints and holes where the sponge or brush cannot reach, will never fail absolutely to destroy them all. Some beds, that have much wood-work, can hardly be thoroughly cleared, without being first taken down; but others, that can be drawn out, or that you can get well behind, to be done as it should be, may.

Note, The smell this mixture occasions, will be all gone in two or three days, which is yet very wholesome, and to many people agreeable. You must remember always to shake the mixture together very well, whenever you use it, which must be in the day-time, not by candle-light, lest the subtlety of the mixture should catch the flame as you are using it, and occasion damage.

NUMBER LXXXIII.

Hints for removing the great Evil occasioned by the Dearness of Provisions, in a Letter to the Editors.

GENTLEMEN,

GREAT complaints have been lately made, and not without abundant reason, of the dearneſs of the neceſſaries of life: this dearneſs ſtill continues, and, as far as I can underſtand, is likely to continue, notwithstanding the matter was laſt ſeſſion taken into the conſideration of the houſe of commons.

This is a great evil, and ſtands in need of an immediate remedy; I am, therefore, in great hopes, that when the parliament next meets in the enſuing winter, ſomething may be done, which will answer every good purpoſe, towards enabling the induſtrious poor to reap the fruit of their labour, without being exacted upon by foreſtallers, regraters, and monopolizers.

In the mean time, it may not be amiſs to throw out a few hints, for the conſideration of thoſe in power, on this important ſubject.

It is well known, that this metropolis is the great mart of the Britiſh empire; whatever is good, whatever is rare, is brought here as to a certain and good market.

The beſt oxen which our grazing counties produce are always reſerved for the conſumption of London; and ſuch is the general inclination of the country people to ſend their goods up to London for ſale, that were there no under-hand dealings, no monopolizers and foreſtallers, all the neceſſaries of life would be ſurprizingly cheap here, in proportion to what they now are, or have been for many years paſt.

It is certain, that, even now, the grazier receives only a moderate price at firſt hand for his cattle; the farmer ſells his butter and cheeſe cheap; yet are theſe commodities

dities to go through so many hands, each of which is to have a separate profit, and some not very moderate neither, before they come to the consumer, that the price in many instances is almost doubled.

I remember an honest farmer in Wiltshire, who, some years ago, when mutton was very dear, as it is now, was told, that if he would send some wethers up to London they would fetch a high price, for that they sold at four-pence *per* pound by the carcase.

Accordingly, our farmer sent up two hundred fine sheep, of a proper age, and in fine order. The consequence was, they were, through a combination among the dealers, two market-days exposed in Smithfield without being sold, and the third day were sold at the rate of something under two-pence *per* pound to a carcase-butcher, who, within the week, killed them, and sold to the retailers at four-pence *per* pound, or very little under that price.

The farmer was, you may imagine, greatly chagrined, as he could have sold them for more at home, and have saved the expence of bringing them to London. He determined within himself to trouble Smithfield no more with his company, but sell his sheep at home, as his neighbours did theirs.

This was what the dealers aimed at, thinking, that by coming up to London with his sheep he encroached on their province; it was, therefore, their intention to *sicken him*, as they called it, and thereby induce him the more readily for the future to sell his sheep to their out-riders.

This instance of the great power and influence of the Smithfield dealers, is one amongst many others which I could enumerate; but it is to little purpose to repeat grievances, unless we, at the same time, attempt a remedy.

When the committee of the house of commons sit next on this business, I could wish them to take into their consideration the means of preventing the markets from being forestalled.

I would humbly offer to them the following crude hints, which will, through your means, readily come to their
I notice,

notice, as I have reason to think that most of them, during the recess, have ordered their booksellers to send them down your work to their country-houses; and this I the rather presume to say, as I know many who have given these orders.

But to return to the subject. It is well known, that a very great number of beasts are every week bought up, by out-riders, as they are driving to market. It is also as well known, that Smithfield is, by the practices of the great dealers, but barely supplied with cattle for the consumption of the metropolis and its environs from market-day to market-day. Also great numbers of beasts are brought to market, and afterwards driven back to the fields about Islington, &c. unfold.

Now I would recommend it to our law-makers, that no man should be left at liberty to buy cattle as they were driving to market within twenty miles of London. That if any cattle were bought on the road to London, at any distance beyond twenty miles, such buyer should give security, before the next justice of the peace, that he would either kill it within a week, and within ten miles distance of the place where he bought it, or that he would not sell it alive within six months of the time he purchased it.

That no cattle should be sold in London, or within five miles of it, for slaughter, in Smithfield only excepted.

That oxen, cows, calves, sheep, lambs, and hogs, sold in Smithfield for slaughter, should not be afterwards sold alive to any person whatever.

That cattle, which were brought to Smithfield market, and driven away unfold, should pay the following tolls, *viz.* For every ox ten shillings, every cow seven shillings, every calf five shillings, every sheep four shillings, lambs two shillings and six-pence each, and each hog or pig three shillings; the produce of this toll to be applied to the relief of poor confined debtors; several of which debtors, upon giving proper security, should be permitted to collect the same. This toll would induce the owners to sell them for slaughter, if they possibly could.

• That

That no cattle, horses excepted, should be sold in Smithfield but for immediate slaughter, as every butcher should be obliged to engage to slay what he bought, within a week, at most, of the time of purchasing.

That all cattle, coming up to Smithfield market, should be exempted from paying any toll at the several turnpike-gates. This is the more reasonable, as our roads are now in general so good, that the other tolls will keep them sufficiently in repair: besides, it is well known that cattle rather do the roads good, by treading in the ruts, than harm.

That no salesman, or carcase-butcher, be henceforward permitted to buy cattle in order to sell them again alive.

That no one carcase-butcher be permitted to buy for slaughter, in one market-day, above ten oxen or cows, two hundred sheep or lambs, fifty calves, and fifty hogs or pigs. This would prevent the market being engrossed by a few over-grown dealers.

That no cattle should be sold in Smithfield market after ten in the morning. This would be replete with many advantages; and several lives would every year be saved by it.

That no salesman be permitted to carry on the business of a carcase-butcher, & *vice versa*.

That no unwholesome, unsound, or distempered beasts, as far as can be discovered on inspection, be permitted to be exposed to sale in Smithfield market.

These considerations above, I recommend to the notice of such of your readers as are members of either house of parliament, and doubt not but they may be found of use. It is, indeed, high time, that some stop should be put to the many grievances above hinted at: the prices of the necessaries of life cannot rise without affecting our manufactures; for if the workmen must pay dear for provision, it is very natural to imagine that they will endeavour, by all legal means, to raise their wages; and this, of course, raises the price of the manufacture, be it what it may, to the merchant.

After the proclamation of the peace, many flattered themselves with the hope of seeing its general concomitant, plenty; but it is a sorrowful truth, that the reverse has been the case, as almost every thing is become dearer since the conclusion of the war. It might, perhaps, not be very difficult to assign a reason or two for this; but as that would lead me beside the subjects treated of in your useful work, I shall say no more of it.

I am, GENTLEMEN,

London,
June 2, 1764.

Your constant reader,

GEORGE SMYTH.

NUMBER LXXXIV.

To the Editors of the MUSEUM RUSTICUM ET COM-
MERCIALE.

GENTLEMEN,

AS all sorts of provisions have been uncommonly dear for some months past, it may not be disagreeable to some of your curious readers to see what the necessaries of life sold for so long ago as the reign of Edward the First.

Your humble servant,

Y. Z.

In an extract from the history of England, in two volumes, octavo, (not said by whom) edition IV. vol. II. page 169, printed at London, 1715, is the following passage relative to the prices of provisions.

In the twenty-seventh year of this king (Edward I.) was made an act of common council, that provision should be sold at the following rates.

	s.	d.		s.	d.
A fat cock	-	-	-	0	1½
A fat capon	-	-	-	0	2½
Two pullets	-	-	-	0	1½
A goose	-	-	-	0	4

A

	s. d.		s. d.
A mallard - - -	0 1 $\frac{1}{2}$	A crane - - -	1 0
A partridge - - -	0 1 $\frac{1}{2}$	Two woodcocks - -	0 1 $\frac{1}{2}$
A pheasant - - -	0 4	A fat lamb, from Christ-	
A hern - - -	0 6	mas to Shrovetide,	1 4
A plover - - -	0 1	And all the year after	0 4
A swan - - -	3 0		

And wheat was this year so plentiful, that a quarter was fold for ten groats.

NUMBER LXXXV.

To the Editors of the MUSEUM RUSTICUM ET COMMERCIALE.

GENTLEMEN,

I Have already sent you the price of provisions in Edward the First's time*: the following anecdote may be equally entertaining to many of your readers, as it contains the price of many necessary articles in the reign of Henry the Sixth.

Your humble servant,

Y. Z.

Extract from the Appendix to Mr. Thomas Hearne's Edition of the Liber niger Scacarii, vide p. 198, 199.

“THE fraternity of the holy cross, in Abingdon, in
 “in Henry 6. tyme, being there where now the hospital
 “is, did every year keep a feast, and then they used to
 “have twelve priests to sing a dirige, for which they had
 “given them four-pence a-piece. They had also twelve
 “minstrels, some from Coventre and some from Maiden-
 “hith, who had two shillings three-pence a-piece, be-
 “sides their diet and horse-meat. This was in the reign of
 “Henry 6. Observe, that in those days they paid their
 “minstrels better than they're priests. They're feast they
 P p 2 “ kept

* See the preceding article.

“ kept yearely on the invention of the holy crosse, viz. the
 “ third of May. They had at their feast six calves, jjs. a-
 “ piece; sixteen lambs, xiid. a-piece; 80 capons, iiid.
 “ a-piece; 80 geese, iid. ob. a-piece; 800 eggs, which
 “ cost five-pence the hundred; and many marybones;
 “ much fruit, spice, a great quantity of milk, cream, and
 “ flour. Wheat was then at xiid. the quarter, in the 23d
 “ of H. 6. Besides what their servants, and others,
 “ brought in, and pageants, and plays, and May-games, to
 “ captivate the scenes of the zealous beholders, and to
 “ allure the people to the greater liberality; for they did
 “ not make their feasts without profit; for those that sat at
 “ dyner payd one rate, and those that stood pay’d another.”

NUMBER LXXXVI.

To the Editors of the MUSEUM RUSTICUM.

GENTLEMEN,

I Have seen, in one of your monthly papers, a copper-
 plate of the price of wheat and malt at Windsor mar-
 ket for one hundred years: to this plate I have added three
 columns, one containing the quantity of wheat exported,
 the next the gross duty on malt, and the third contains the
 compositions made each year; so that over-against the date
 you find each of those articles for that year. This may be,
 at least, a matter of curiosity, and, perhaps, of use to
 your readers: as such I send it, that you may, if you think
 proper, publish it. The sums are certainly true.

I am, GENTLEMEN,

Your humble servant,

June 15, 1764.

Y. Z.

N. B. There is no occasion for beginning higher than
 1696, because the accounts go not higher.



By William Hanbury of Kelmarsh in the County of Northampton Esq. A Table Shewing
The Price of Wheat & Malt at Windfor Market from 1646 to 1746 being 100 Years.

13. the Bushel contains 9 Gallons, and
 the Duty on Malt is not included. }

Since Continued 12 Years further to 1758.

	WHEAT		MALT	
	P ^r Quarter	P ^r Bushel	P ^r Quarter	P ^r Bushel
	£ s d	£ s d	£ s d	£ s d
For the 1 st 20 Years, from 1646 to 1666	2 " 17 " 5 ¹ / ₄	0 " 7 " 2	1 " 12 " 0 ³ / ₄	0 " 4 " 0
2 " " " " " " " " " " " "	2 " 6 " 3 ¹ / ₄	0 " 5 " 9 ¹ / ₂	1 " 6 " 7	0 " 3 " 3 ³ / ₄
3 " " " " " " " " " " " "	2 " 5 " 10 ³ / ₄	0 " 5 " 8 ³ / ₄	1 " 6 " 8	0 " 3 " 4
4 " " " " " " " " " " " "	2 " 4 " 9 ³ / ₄	0 " 5 " 7 ¹ / ₄	1 " 8 " 2 ¹ / ₂	0 " 3 " 6 ¹ / ₄
5 " " " " " " " " " " " "	1 " 17 " 9 ³ / ₄	0 " 4 " 8 ¹ / ₂	1 " 7 " 0 ¹ / ₂	0 " 3 " 4 ¹ / ₂
And for the 10 Years since from 1746 to 1756	1 " 17 " 4	0 " 4 " 8	1 " 5 " 4	0 " 3 " 2
Wheat at the Highest Price A.D. 1648	4 " 5 " 0	0 " 10 " 7 ¹ / ₂		
At the lowest Price A.D. 1744	1 " 4 " 10	0 " 3 " 1 ¹ / ₂		
The Difference between the high st & low st Price of Wheat in the 100 Years	3 " 0 " 2	0 " 7 " 6		

Malt at the Highest Price A.D. 1659

At the lowest Price A.D. 1691

The Difference between of two Extremes

If the Century be divided into 2 halves of 50 Years
 each, then the Common Price or mean Rate of the
 first 50 Years, is

2 " 10 " 2 ¹ / ₂	0 " 6 " 3 ¹ / ₄	1 " 8	4 ¹ / ₂	0 " 3 " 6 ¹ / ₂
And the Common or Mean Rate of the last 50 Years is	2 " 2 " 8 ¹ / ₄	1 " 7 " 10 ¹ / ₄		0 " 3 " 5 ³ / ₄
And the Common or Mean Rate of the Whole Century is	2 " 6 " 5 ¹ / ₂	1 " 8 " 1 ¹ / ₂		0 " 3 " 6 ³ / ₄
13. A.D. { 1756 the Common or Mean Rate was	2 " 5 " 2	1 " 6 " 0		0 " 3 " 3
1757	3 " 0 " 0	1 " 16 " 0		0 " 4 " 0

Years.	Wheat per Qr.		Malt per Qr.		Wheat exported.		Gross Duty on Malt.		Compositions.		
	L.	S. D.	L.	S. D.	Qr.	Bush.	L.	S. D.	L.	S. D.	
1713	2	11	0	7	176,247	1	645,195	3	4671	12	6
1714	2	10	4	9	175,074	0	516,267	12	4503	15	0
1715	2	3	0	10	165,490	2	631,097	0	4233	17	6
1716	2	8	0	8	74,642	0	687,061	8	4224	0	3½
1717	2	5	8	5	22,741	1	744,236	13	4347	6	0
1718	1	18	10	4	71,800	0	692,718	8	4447	12	6
1719	1	15	0	6	127,762	1	727,956	16	4578	11	3
1720	1	17	0	11	81,882	2	660,836	10	4690	11	3
1721	1	17	6	8	81,632	6	737,208	11	4692	8	9
1722	1	16	0	2	178,880	3	850,992	8	4868	10	0
1723	1	14	8	3	157,719	6	790,540	14	4811	13	9
1724	1	17	0	10	245,864	6	624,780	9	4722	2	6
1725	2	8	6	8	204,413	3	703,111	7	4356	5	0
1726	2	6	0	8	142,183	3	696,642	14	4291	4	3
1727	2	2	0	8	30,315	3	655,330	12	4301	2	6
1728	2	14	6	12	3,817	0	540,202	15	4254	17	6
1729	2	6	10	14	18,993	3	593,693	17	4153	7	6
1730	1	16	6	7	93,970	7	732,228	11	4372	13	9
1731	1	12	10	0	130,025	2	665,957	14	4222	10	0
1732	1	6	8	5	202,058	4	693,369	18	4011	7	6
1733	1	8	4	2	427,199	0	768,101	15	4037	7	6

Years.	Wheat per Qr.		Malt per Qr.		Wheat exported.		Gross Duty on Malt.		Compositions.	
	L.	S. D.	L.	S. D.	Qr.	Bush.	L.	S. D.	L.	S. D.
1734	1	18 10	1	2 8	498,196	4	698,381	4 11 $\frac{1}{4}$	3903	1 3
1735	2	3 0	1	2 8	153,343	5	657,446	14 5 $\frac{3}{4}$	3813	2 9
1736	2	0 4	1	4 0	118,170	7	610,168	2 2 $\frac{1}{2}$	3750	18 9
1737	1	18 0	1	6 8	461,602	0	631,431	6 10 $\frac{1}{4}$	3847	2 6
1738	1	15 6	1	8 0	580,596	4	674,096	14 5 $\frac{1}{4}$	3769	15 0
1739	1	18 6	1	6 0	279,542	4	688,916	17 0 $\frac{1}{2}$	3870	5 0
1740	2	10 8	1	12 0	54,390	4	569,129	7 6	3930	0 0
1741	2	6 8	1	12 8	45,416	7	519,393	10 4 $\frac{1}{4}$	3788	15 0
1742	1	14 0	1	10 8	293,259	6	665,128	13 9 $\frac{1}{4}$	3682	12 6
1743	1	4 10	1	8 8	371,431	3	678,134	1 8	3606	6 3
1744	1	4 10	1	4 8	231,984	5	819,368	8 8	3575	3 9
1745	1	7 6	1	3 4	324,839	5	642,557	0 11 $\frac{1}{4}$	3441	12 6
<p>N. B. In this computation you are to know, that in every year there are two prices of corn, the one at Lady-Day, the other at Michaelmas; both which are put together, and the half is taken for the common price of that year, as before noted; but for the year 1740, the price is put down as it was at Lady-Day only.</p>										
1746	1	19 0	1	2 4	130,646	2	617,756	16 6 $\frac{3}{4}$	3290	7 6
1747	1	14 10	1	2 8	266,906	7	641,747	16 4 $\frac{3}{4}$	3255	7 6
1748	1	17 0	1	3 4	543,387	5	681,359	15 2 $\frac{1}{2}$	3292	15 0
Total					8,436,962	4				

	Wheat.	Qr.	Bush.
Exported the last fifteen years	—	4,353,715	4
Ditto the preceding thirty-five years	—	4,083,247	0
Total exported in fifty years	—	<u>8,436,962</u>	<u>4</u>
The export of the last fifteen years exceeds the thirty-five preceding years	—	270,468	4
At an average, each year of the last fifteen years there must be exported	—	290,247	5
At an average annually for the thirty-five years	—	116,664	1
The increase of export annually, at an average, for the last fifteen years	—	<u>173,583</u>	<u>4</u>
<i>The Export of each Ten Years.</i>			
The first ten years	—	974,622	1
The second ten years	—	981,906	6
The third ten years	—	1,254,471	1
The fourth ten years	—	2,684,156	4
The fifth ten years	—	<u>2,541,806</u>	<u>0</u>
Total	—	<u>8,436,962</u>	<u>4</u>

Years.	Wheat per Qr.		Malt per Qr.		Wheat exported.		Gross Duty on Malt.		Compositions.	
	L.	S. D.	L.	S. D.	Qr.	Bush.	L.	S. D.	L.	S. D.
1749	1	17 0	1	5 4	629,049	0	643,779	17 5 $\frac{3}{4}$	3166	5 0
1750	1	12 6	1	5 4	947,602	1	755,177	4 4	3219	13 9
1751	1	18 6	1	6 0	661,416	4	696,084	5 5 $\frac{3}{4}$	3234	6 3
1752	2	1 10	1	7 4	429,279	4	626,131	11 1 $\frac{3}{4}$	3183	2 6
1753	2	4 8	1	7 4	299,608	7	650,907	9 10 $\frac{3}{4}$	3523	6 3
1754	1	14 8	1	8 0	356,270	1				
1755	1	13 10	1	5 4	237,459	2				
1756	2	5 2	1	6 0	101,936	4				

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	Wheat per Qr.		Malt per Qr.		Wheat exported.		Gross Duty on Malt.		Compositions.	
	L.	S. D.	L.	S. D.	Qr.	Bush.	L.	S. D.	L.	S. D.
The first ten years amount	—	—	—	—	—	—	4,422,160	9 0 $\frac{1}{4}$	23,702	16 8 $\frac{3}{4}$
The second ten years	—	—	—	—	—	—	6,096,215	12 9 $\frac{1}{4}$	45,078	4 6 $\frac{1}{2}$
The third ten years	—	—	—	—	—	—	6,987,603	1 5 $\frac{1}{2}$	45,567	6 9
The fourth ten years	—	—	—	—	—	—	6,724,755	19 11	39,881	6 6
The fifth nine years, and one to be added,	—	—	—	—	—	—	5,842,132	12 10 $\frac{3}{4}$	32,440	10 6
Total	—	—	—	—	—	—	30,072,867	16 0 $\frac{3}{4}$	186,670	4 6 $\frac{1}{4}$

N. B. The export of wheat comes to, *com. ann.* 168,739qr. 2bush. or 1,144,914 bush. that is, 42,184l. 6s. *per annum*, if the bounty money is allowed, which is 5s. *per quarter*.

N U M.

N U M B E R LXXXVII.

An Account of the Quantity of Corn exported from Michaelmas 1696, to Christmas 1756, distinguished each Year.

	Barley.	Malt.	Oatmeal.	Rye.
	Qr.	Qr.	Qr.	Qr.
	Bush.	Bush.	Bush.	Bush.
From Michaelmas 1696 to Michaelmas 1697	32,855	51,811	295	2,596
From Michaelmas 1697 to Michaelmas 1698	30,984	44,526	151	1,275
From Michaelmas 1698 to Christmas 1698	5	2,059	20	68
From Christmas 1698 to Christmas 1699	75	1,511	301	405
From Christmas 1699 to Christmas 1700	25,896	37,571	391	27,231
1701	21,953	50,447	285	43,917
1702	16,280	71,856	89	51,710
1703	71,523	123,291	159	58,438
1704	30,729	102,873	219	29,284
1705	21,386	137,396	100	24,059
1706	10,221	141,084	62	49,892
1707	4,771	111,153	103	34,032
1708	29,937	97,789	67	4,720
1709	40,512	139,934	37	166,512
1710	5,744	79,530	125	12,215
1711	8,412	139,975	321	37,957
1712	19,838	191,624	303	17,735

N. B. The quantity of wheat exported each of these years may be seen by referring to the last article.

	Barley.		Malt.		Oatmeal.		Rye.	
	Qr.	Bush.	Qr.	Bush.	Qr.	Bush.	Qr.	Bush.
From Christmas 1712 to Christmas 1713	52,542	0	217,975	7	1,376	3	38,625	7
1714	18,579	5	220,274	7	129	0	20,455	0
1715	5,080	1	103,365	1	303	5	31,161	2
1716	14,857	0	226,617	0	719	6	40,123	1
1717	18,435	7	251,083	1	404	1	23,031	6
1718	71,139	7	303,133	3	868	5	49,416	6
1719	9,649	3	357,499	1	219	3	45,502	2
1720	4,505	6	253,509	6	3,471	4	49,241	3
1721	11,608	3	338,942	6	577	7	69,697	5
1722	37,528	7	366,728	2	324	4	42,579	0
1723	45,789	6	305,063	5	541	5	12,737	6
1724	10,298	5	241,895	0	516	4	23,441	4
1725	13,782	6	294,025	2	1,447	4	20,539	5
1726	20,017	1	335,925	5	1,412	6	18,835	2
1727	8,688	4	241,428	4	2,204	7	9,169	3
1728	198	2	195,340	6	1,383	2	13	5
1729	4,650	4	130,743	7	2,541	0	1,460	3
1730	14,982	3	179,446	2	4,479	2	12,394	4
1731	13,562	2	177,699	4	1,808	1	21,089	7
1732	13,874	6	161,075	4	1,274	7	15,535	5
1733	37,598	0	203,115	0	1,487	4	28,155	1
1734	70,224	5	233,124	0	3,038	6	10,735	0
1735	57,520	3	219,781	7	1,920	6	1,329	4

	Barley.		Malt.		Oatmeal.		Rye.	
	Qr.	Bush.	Qr.	Bush.	Qr.	Bush.	Qr.	Bush.
From Christmas 1735 to Christmas 1736	6,860	1	192,602	4	1,196	5	1,220	5
1737	23,669	5	103,718	2	1,921	4	7,849	3
1738	70,689	6	188,607	7	1,777	3	36,159	1
1739	54,447	1	191,876	6	1,116	3	29,791	2
1740	24,036	6	145,527	5	2,571	7	8,979	4
1741	6,614	1	123,357	6	1,106	6	7,622	1
1742	11,482	4	189,525	7	1,380	2	63,272	2
1743	34,995	1	219,217	5	1,882	3	88,272	7
1744	20,090	0	219,862	4	1,657	6	74,169	1
1745	95,878	7	219,354	6	9,770	3	83,966	2
1746	158,719	3	282,024	6	20,203	0	45,782	3
1747	103,140	2	361,289	3	2,122	4	92,718	3
1748	73,857	0	349,363	0	3,768	4	103,891	4
1749	52,621	3	355,469	5	1,281	2	106,312	4
1750	224,500	7	330,754	2	4,283	4	99,049	3
1751	32,698	0	256,547	4	2,476	2	71,048	4
1752	106,331	3	287,578	6	1,590	1	57,847	2
1753	67,049	0	274,424	7	7,012	1	24,835	7
1754	47,776	3	321,995	0	2,330	2	42,915	1
1755	32,836	0	341,568	6	1,112	2	43,441	7
1756	26,938	5	236,925	6	2,310	4	29,968	7

NUMBER LXXXVIII.

Thoughts on the Culture of Grasses and artificial Pastures, contained in a Letter from a Member of the Society, to the Editors.

GENTLEMEN,

I Was greatly pleased with a piece in your last publication, marked Numb. LXXI. page 309, Vol. I. being a letter from Mr. Rocque, of Walham-green, to Mr. Corbett, of Salop.

I cannot but think the public greatly indebted to Mr. Rocque for the pains he has taken to perfect the culture of lucern* in England: the farmer may now safely sow it in large quantities, assured of a return that will pay him better than clover, ray grass, or any of the artificial grasses now cultivated in common.

He has also, I find, made great advances in ascertaining the proper culture of the burnet-grass, which is likely, in the opinion of some, to turn out as profitable a crop as lucern, and in some respects more useful, as affording an earlier feed in the spring.

But to come to the more immediate subject of this letter, I perceive that Mr. Rocque, in Numb. LXXI. above referred to, page 310, mentions the *sheep's fescue* grass, but defers giving any account of its culture till the latter end of the year, when he will be better enabled, by experience, to do it.

I approve much of his caution, but at the same time imagine your readers will not be displeased to be told something of the *fescue grasses* in their wild, natural, and uncultivated state, as it may possibly induce some to make immediate experiments of its culture, when their accounts will, in all probability, corroborate what will be sent you

* See the piece marked Numb. LXXXI. Vol. I. which contains Mr. Rocque's method of cultivating lucern at large. H.

you on the subject by the very ingenious and industrious Mr. Rocque.

The matter of grasses has been long neglected in England; and indeed it is but very lately that we paid any regard to this important branch of agriculture.

Our lands in tillage have been for many centuries diligently cultivated; diligently, I say, when compared to the state of neglect in which our meadows and pastures have been left.

It is no uncommon thing to see a meadow, the soil of which is naturally rich, over-run with noxious weeds, and its value reduced, by that means, at least two thirds. To what can this be ascribed but infatuation, to the farmers being wedded to old opinions, and to the notion some have that an ancient meadow ought never to be ploughed, for fear of spoiling the turf?

We cultivate wheat, rye, barley, oats, &c. separately, and in detached pieces: we have the seed of each, and carefully keep the several kinds to sow distinctly; and why should not the grasses enjoy as much of our care? why should not we save the seeds of such as are best worth cultivating, and sow them separately, and distinctly, on well-prepared land, as we do corn?

It is true, we now seem to be, in some measure, roused from our lethargy; and the lovers of husbandry will, in all probability, soon afford to the long-neglected grasses a proper share of their countenance and favour: these last will not, I dare say, be unmindful of the obligation, but, by an increased produce, make large and grateful returns to their benefactors.

It is not every kind of grass that will agree with all cattle: cows love one sort, sheep prefer another, and horses like a third: it is, therefore, for the interest of the farmer, to cultivate such as are best suited to his convenience. In a dairy-farm the larger and more luxuriant kinds of grasses should be preferred; and the same may be said of the grazing farm; but where a fine sheep-walk is wanted, the sweeter and less-rampant grasses will, of course, be chosen:

sen: among these the *sheep's fescue grass* will, doubtless, be first chosen.

This is the grass which in Sweden is so much valued for feeding sheep.

Gmelin Flor. Sibir. says, that the wandering Tartars choose to fix their summer's encampment in places where the greatest plenty of this grass is to be met with, because they are sensible it affords a sweet and good nourishment for all kinds of cattle, but chiefly sheep: and he observes, that the sepulchral monuments of the antient Tartars are mostly found in places that abound with this grass; which shews, adds he, that it has long been valued amongst them.

The above is taken notice of by the very ingenious Mr. Stillingfleet in his *Observations on Grasses*; a work which cannot be enough prized, not only on account of the many useful hints contained in it, but because this public-spirited gentleman was the first who presented to our view the many kinds of excellent grasses which grow in England in a natural, wild, and uncultivated state.

Mr. Stillingfleet, treating of the grass now in question, viz. the *sheep's fescue grass*, says, it is to be found in great plenty in many parts of England and Wales, and indeed on all the finest sheep-pastures in Herefordshire, Berkshire, Oxfordshire, Norfolk, &c.

This is a forward grass, perfecting its seeds early in the spring. The above very ingenious writer farther observes, that, contrary to what Linnæus says, either the sheep, or some other animals, do eat the flowering stems of this grass; for, on searching Banstead-downs at the proper season, he could find nothing but the radical leaves of it, unless amongst the bushes near the hedges, where it was guarded from the sheep.

This then is the nature of the *sheep's fescue grass* in its wild state. We find it is esteemed by the Swedes and Tartars, and universally found on all our best sheep-walks in England: may we not reasonably then conclude, that this is as proper a pasture as any we can chuse for our sheep? and is it not to be presumed, that when it comes to be cultivated,

cultivated, it will improve in its qualities, and will, doubtless, thrive better, and yield a greater produce, when it is unelbowed by voracious intruders?

The author of the Swedish Pan, translated by Mr. Stillingfleet, says, that “sheep, above all things, delight
“ in the *festuca*,” (fescue grass) “and grow fatter upon it
“ than any other kind of grass.” This is a further inducement for our cultivating it.

There are several other kinds of *fescue* grass mentioned by Mr. Stillingfleet, as the *purple fescue*, which grows in great plenty on Banstead-downs, and is fine feed for sheep.

The *flote fescue* affords excellent feed for horses. Mr. Stillingfleet, quoting a piece published in the Amœn. Academ. vol. III. entitled *Plantæ Esculentæ*, takes notice, that the author of it says, artic. 90, “that the seeds of
“ this grass are gathered yearly in Poland, and from thence
“ carried into Germany, and sometimes into Sweden, and
“ sold under the name of manna-seeds. These are much
“ used at the tables of the great, on account of their
“ nourishing quality and agreeable taste.”

Our ingenious countryman, in his addition to this passage, has the following words. “Mr. Dean, a very sensible
“ farmer at Ruscomb, Berkshire, assured me, that a field;
“ always lying under water, of about four acres, that was
“ occupied by his father when he was a boy, was covered
“ by a kind of grass that maintained five farm-horses in
“ good heart, from April to the end of harvest, without
“ giving them any other kind of food; and that it yielded
“ more than they could eat. He, at my desire, brought
“ me some of the grass, which proved to be the *flote*
“ *fescue*, with a mixture of the *marshbent*. Whether
“ this last contributes much towards furnishing so good a
“ pasture, I cannot say. They both throw out roots at the
“ joints of the stalks, and therefore likely to grow to a great
“ length. In the index of dubious plants at the end of
“ Ray’s Synopsis, there is mention made of a grass, under
“ the name of *gramen caninum supinum longissimum*, grow-
“ ing not far from Salisbury, twenty-four feet long. This

“ must, by its length, be a grass with a creeping stalk ;
“ and that there is a grass in Wiltshire, growing in watery
“ meadows, so valuable that an acre of it lets from ten to
“ twelve pounds, I have been informed by several persons.
“ These circumstances incline me to think it must be the
“ *flote fescue* ; but, whatever grass it be, it certainly must
“ deserve to be enquired after.

“ There is a clamminess on the ear of the *flote fescue*,
“ when the seeds are ripe, that tastes like honey, as I have
“ often found ; and for this reason, perhaps, they are
“ called manna-seeds.

“ *Linnæus Flor. Suec.* art. 95, says, that the bran of this
“ grass will cure horses troubled with bots, if kept from
“ drinking for some hours.” So far the very ingenious
Mr. Stillingfleet.

I own, I should be apt to conclude, from what is said
above, that the *flote fescue* is one of the best grasses that we
can cultivate for the use of our horses, and the more
especially, as it appears to thrive best in wet low meadows,
where many other grasses would not grow.

There are at *Clacton-lodge*, in the county of Essex, not
far from Thorp, some low meadows, which are every year
flooded for months together during the winter season : these
meadows are covered with a grass of a remarkable fattening
quality ; for when old cows were turned into them, though
they were ever so poor and low in flesh, they would, in a
space of time surprisingly short, grow fat ; and, when
killed, the meat would look as fine, and taste as well, as
that of any steer, or ox, I ever eat. This fact was told
me at the lodge, whilst I was dining on a large joint of
this meat, with the gentleman who then occupied the farm.

I cannot help imagining, that the grass growing in these
meadows is the *flote fescue* ; but as I have not been lately
in that part of England, I have had no opportunity of ex-
amining it.

There is another grass, mentioned by Mr. Stillingfleet,
which seems particularly well adapted to dairy farms ; that
is, the *annual meadow* grass.

Our author observes this makes the finest of turfs. It is called in some parts *the Suffolk grass*. He has seen, he says, whole fields of it in *High Suffolk*, without any mixture of other grasses; and as some of the best salt-butter we have in London comes from that county, it is most likely to be the best grass for the dairy.

It would be a very easy matter to procure plenty of the seeds of this grass from Suffolk; by which means it might be propagated and cultivated in all parts of England, where the soil and situation were adapted to its growth.

It is indeed amazing, amidst the great variety of grasses which grow naturally in England, that so few farmers have had any thought about improving their meadows and pastures: they seem to take every thing upon trust, imagining, perhaps, that the grass they find growing naturally in their grounds is much better, and more adapted to the nature of the soil, than any other they could sow, or regularly cultivate, in its stead.

This is, indeed, a very narrow way of thinking, and, should it be encouraged, would soon put a stop to all improvements in husbandry.

We have long been enslaved by custom: it is time for us to shake off our fetters, and rouse ourselves from the deep lethargy which has prevented us from perceiving, or at least from removing, the disadvantages of the old husbandry, the practice of which is, in many respects, absurd, ridiculous, and against nature.

Many struggles have, within this century, been made to improve our husbandry; but these were, in a great measure, without success, till the establishment of the society of which we are members: then, it is true, a dawn of hope began to revive in the breast of every lover of his country. The premiums they have offered have occasioned some improvements, and there is no reason to doubt, but many good effects will proceed from them.

Few farmers are now strangers to the advantages resulting from the culture of clover, especially on strong lands, where it thrives to admiration. I have seen amazing crops of this
hay

hay got from fields, which before yielded the occupier scarcely any fodder for his cattle ; whereas, by the culture of this useful plant, he is enabled to encrease his stock, and vary his crops to a much greater advantage.

Clover now often supplies the place of a fallow, and very fine wheat is found to grow upon a clover lay, though the crop is not, perhaps, so large as when it is sown on a fallow.

The lucern was formerly esteemed an exotic plant ; yet we find it thrives very well in England, especially if it is cultivated in Mr. Rocque's method, of which I see a correspondent of yours has obliged the public with a detail.

The advantages resulting from the culture of saintfoin have long been known in Kent, and many other parts of England, where a great deal of it is annually sown.

The Kentish farmers find it thrives well, and yields a reasonable encrease, in soils where scarcely any other plant, fit to produce fodder for their cattle, would at all take : such are the chalky soils to be met with in many parts of that county.

Our artificial pastures are now so much encreased, that I hope no farmer will be at a loss what kind to sow : they are, one or other of them, suited to every soil and circumstance ; and there is, in fact, no pretence for the ill-judged practices which have long been adopted by the occupiers of land in England.

By the help of artificial pastures we may crop our lands without allowing any year of fallow, and yet gratify the soil with a greater variety than the old husbandry would admit of.

Few farmers are enough sensible of the very great advantages that may be made by judiciously sowing pulse or legumenous plants, such as peas, beans, tares, &c. nothing can be more effectual for destroying weeds, nothing can better tend to prepare land for a succeeding crop of wheat.

I shall not detain your readers longer at this time, but defer enlarging on this subject till another opportunity occurs to,

GENTLEMEN,

London,

Your humble servant,

May 24, 1764.

A BY-STANDER.

N U M B E R LXXXIX.

A Letter to the Editors, on the Benefit of sowing Wheat, in particular Instances, on an Oat-Stubble; and on the Advantages resulting from the Use of Chalk as a Manure to clayey Soils.

GENTLEMEN,

IF I mistake not, some of your correspondents have expressed a surprise, that wheat should follow oats in a course of crops; as I have a little leisure on my hands, I shall endeavour to give them some satisfaction in this point.

I have been many years a farmer in this county, and though I did not finish my education at Cambridge, yet I flatter myself, I am not entirely ignorant of what I call necessary knowledge.

In many cases experience is the best instructor; and if to this a farmer adds observation on causes and effects, he can scarcely fail of success in his occupation.

I live within a few miles of the eastern extremity of *Essex*, where, though our practice may not be much refined by modern improvements, yet is it far from being clogged with many obstinate errors.

The chief manure that we depend on for our lands in tillage, is yard-dung; and this is well known to breed an infinity of weeds, insomuch that when we dung a fallow, and sow it with wheat, the crop is over-run, choked with, and almost destroyed by weeds, which spring up with it, and accompany it in its growth.

It was natural for us to seek for a remedy for so great an evil; and this, after many years, if tradition speaks truth, was luckily discovered.

The remedy above hinted at, is no other than sowing white oats on our fallow, as a first crop: these, for we allow a large quantity of dung to an acre, take off the rankness, destroy numberless weeds, and prepare the land to yield a sweet crop of wheat.

I perceive, some of your correspondents know nothing of this husbandry; but they should not, like the mole, think all light dazzling, that is too powerful for their weak eyes.

Very few understand all branches and methods of husbandry; and indeed it is commonly said, that the art of farming can never be completely attained: we therefore should never think ourselves too old to learn.

A system that may do extremely well on one farm would ruin the tenant, if indiscriminately applied to practice on another, perhaps only divided from the first by a single hedge. A farmer, to thrive, must be a judge of circumstances and contingencies. What might be very expedient, and even necessary, in one case, would, perhaps, be downright madness in another. I advise, therefore, every farmer to think before he acts; for more farmers are ruined for want of thinking, than for want of working.

Some of your readers may, perhaps, be ignorant of the great benefits resulting from the use of chalk, as a manure on clay lands: from experience I recommend the use of it; but it should be laid on rough, in large clods, and the land will be more gradually benefited by it. The salts in the air will penetrate, and crumble, the clods; and the land on which the chalk is laid will soon be brought into a state of fermentation, reduced and pulverised in a special manner, insomuch that afterwards one ploughing will go as far towards bringing it into tilth, as two would before.

The quantity of chalk should be proportioned to the stubbornness of the soil. I have used it in various quantities, from fifteen to thirty tumbril-loads on an acre.

The virtues of this manure are not exhausted under, at least, twenty years; neither are they much perceived till the third year; but for twelve or fourteen years the farmer has reason to thank those who advised him to the step of chalking his clay lands: and happy is he who can afford to do

it,

it, provided he has a long lease; for lands, not worth five shillings an acre, have, by this means, been, in a year or two, made worth twenty.

I am, GENTLEMEN,

Your humble servant, and reader,

May 30, 1764.

An ESSEX FARMER.

NUMBER XC.

A Letter to the Editors on the Benefit of Lime, when applied as a Manure to a sandy Soil.

GENTLEMEN,

IN my letter to you on the use of goss, or furze, as food for cattle, (see Numb. XXXIX. page 118 of this Volume) I mentioned having found great benefit from liming some of the land therein described.

I have now only time to give an account of one particular piece of the sandy ground, of about six acres, which had been ploughed at least thirty years, and seldom, or never, produced a good crop; and vastly subject to what we call *walder*, and *buddle*, *bodle*, or *gould*, as some call it.

The opinion of the farmers being, that lime would do very little or no good on stale ploughed lands, induced me to make the experiment on two acres of this field, as I had conceived a different opinion: I therefore had rather more than a Winchester bushel of lime laid on every perch, and this too after a very bad crop of barley, which was full of the above-mentioned weeds. It having been well cleared from grass, I had it sown the beginning of December following with wheat: the produce was great, and free from any kind of weeds.

This success made me, the year before last, lime two acres more of it (which had produced a very poor crop of tares) in the same manner; and as the wheat-land was so very clean, I had that sown again with wheat, the two acres last limed, and also the remaining two acres, which
had

had been sown with buck, or French wheat, and stood for a crop, partly by way of experiment, and also to bring this field into one tilth: the consequence was, that part which was wheat before was good, and clear from weeds; the last limed exceeding good, and quite free from weeds; but the other part, which had not been at all limed, was full of those weeds, and hardly worth mowing*.

I am therefore, from the result of these experiments, inclined at present to believe, that lime will seldom fail of success on stale ploughed land, such as sand and gravel, provided a sufficient quantity be laid on, as it closens these lands, and by that means, I apprehend, it prevents the weeds from growing.

I am, GENTLEMEN,

Your most humble servant,

June 4, 1764.

A KENTISHMAN.

NUMBER XCI.

A Letter to the Editors, describing an Instrument for making Drains; and also relative to the artificial Grasses that are fit for wet Clays.

GENTLEMEN,

IT is with pleasure that I read your valuable work, which is so well calculated for conveying useful knowledge from one part of the kingdom to another. I shall offer my mite, if you think it worthy of a place in your collection: if not, when you have read it, you may lay it aside, and the trouble of reading it will not be great.

It is upon a simple, but useful, instrument for draining wet land, which we call *a guttering, or draining plough*, and is worked by one man only: I prefer it to that plough drawn by horses, for several reasons; as in wet land (which is the land that wants draining) the horses tread

100

* We should be glad if this gentleman would, at his leisure, enter more at large on his management of his poor land. N.

too much, and are more chargeable than this worked by one man, though perhaps that may make a deeper drain; but this will make one of six or eight inches deep. It is used much for draining of bleaching-grounds in this part of the country, and may do very well for wet clay meadow-land, where the soil is but ebb, and apt to put up a large quantity of rushes, as much of the meadow-land with us is apt to do after such a wet winter as the last has been.

In flat clay meadow-land, if a drain of four or five inches broad, and six or eight inches deep, be made between every land, and the clods gathered in heaps, and mixed with lime or dung, or both, to ferment together, it affords a good quantity of manure to be laid upon the land, when well rotted, and is very serviceable for preventing the rushes from getting such a head as they are apt to do in our wet land; but I do not find that it will effectually kill them: if any of your correspondents will favour us with a method, or manure, that would effectually kill them, it would be very acceptable, I am persuaded, to many of your readers.

Whether this method be universally practised, or not, I know not; but this I know, it has not been long in use with us in this part of the country; but, from its great utility, it ought to be publicly known and practised in wet land: and if any of your correspondents, where the practice has been of longer use with them, will favour us with any improvements upon so useful an instrument, or the manner of working it, it will be very agreeable to many of the readers and well-wishers to your useful work.

Some may, perhaps, think it too hard labour for one man to work with it; but I can certify, by experience, that one man, of middling strength and activity, will do as much work as a dozen, or more, with little shovels; which has been practised afore-time with us.

As my situation is upon a wet clay with little soil, I have not made many experiments with artificial grass, which has
been

been so much treated of in your useful collection; only clover, which I can get to answer tolerably well for one year, but the winter often destroys much of it; and once a small parcel of rye-grass, which I think more durable upon wet land.

My common method for pasture, when I design a piece of land to lie after several years tillage, is, to leave it upon the wheat root; by which means it comes to grass the sooner; and, as the land lies higher upon the ridge, it is kept dryer in the winter, which, in our wet land, ought to be much regarded.

As I occupy but a small quantity of land, having other business upon hand, I have not made so many experiments in agriculture as in some other things, which I may sometime or other, perhaps, communicate to you, if you think them worth your observation*.

But as writing and drawing are not my occupation, you must excuse any inaccuracy in the style, or incorrectness in the drawing, well knowing that you can correct the one, and your engraver the other.

If any of your correspondents would favour us with the result of their experiments relative to the properest artificial grass to be sown on wet clay land, with the best method of managing it, it would, I am persuaded, be very acceptable to many of your readers, and particularly to,

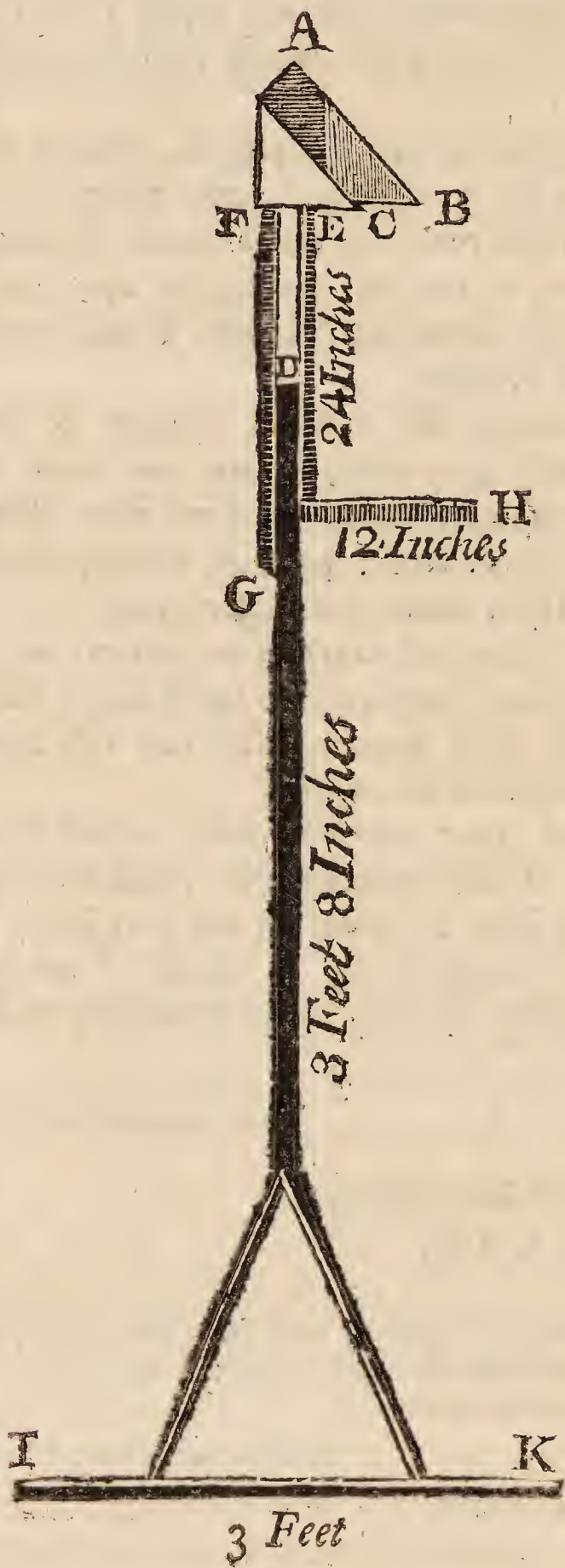
Your humble servant,

Gorton, near Manchester,
June 1, 1764.

J. S.

* We should be glad to hear from this correspondent on the subjects he alludes to. R.

FIGURE of the INSTRUMENT.



EXPLA-

EXPLANATION of the FIGURE.

A, the point.

E, B, the right-hand side.

F, C, the left-hand side. These sides are perpendicular, or upright, eight inches high, or more, or less, as you please; the fore-edge inclining backward, which is made sharp for cutting, as likewise the point A. The distance between the two sides four or five inches, the width you would have the drain, or gutter, to be made.

D, shews where the stale goes into the socket: there is here a small wedge on the under side to set it higher or lower, when it is worked with. From F to G, a rib is fastened, as also one on the other side, to make it the breadth of the mouth, that the clod may lie upon it till it is ready to turn off.

H, a strong peg about a foot long, and two inches diameter, fastened to the side of the stale with screws: this peg resteth upon the land when the clod is to be turned out of the mouth.

I, K, a cross piece three feet long for handles, and to push with, or against, when it is at work.

NUMBER XCII.

A Letter to the Editors concerning a very ingenious new-invented Carriage, much superior, for carrying heavy Loads, without Injury to the Roads, to any now in Use, yet not more expensive in the Purchase than common Carriages.

GENTLEMEN,

YOU did me the honour to insert in your collection (Vol. I. N^o. CXII. page 477) a paper of mine, with some plans of carriages that might be useful to the husbandman and gardener.

Since that time I have seen one of them executed. It is the small wheel-barrow, which has answered so well, as to perform, with one boy, the work of four men with four common barrows.

Though this contrivance is of a trifling nature, yet, I imagine, in large improvements it might save several guineas in a year.

But in a trading nation, where inland navigation is difficult or tedious, nothing can certainly be of more general utility than a contrivance which shall lessen the expence of land carriage.

This (as, I imagine, is obvious to every person skilled in the principles of mechanics) could easily be effected for a few years; but the injuries the roads must suffer in the end, or the continual expence necessary to keep them in repair, would in a short time counterbalance the advantage which would at first arise from it.

The only method that remains is, therefore, to construct a carriage that shall carry a much greater weight, in proportion to the number of horses that are to draw it, than any yet invented, that shall not injure the roads, nor yet cost more in its first purchase than common carriages now do.

I flatter myself, that I have invented a machine which shall answer all these ends.

It is something like the cart for hay, mentioned by me in page 477, above referred to.

In that paper I only offered it to the consideration of the ingenious. Since that time, I had recourse to experiment, which should alone encourage me to speak with confidence of success in any thing of this nature.

With models of the broad-wheeled cart and waggon now in use, I tried one of the carriage above mentioned. With the same power it moved three times and one sixth the weight that any of the others did, and cut but half the depth that they did into the soft substance upon which I tried them.

I have

I have been, for a short time since then, in Ireland, where a nobleman, with whom I am acquainted, tried a carriage something resembling this, though wanting a material principle of it; which had such success as to be shewn to Lord Northumberland for his approbation.

With the improvements I have since made in my former plan, I imagine it will very much exceed any carriage yet invented.

First, as four horses shall in this do the work of twelve in any other carriage.

Secondly, as, by its being upon two wheels only, no greater weight can, by the most avaricious carrier, be placed upon it, to injure the roads, than two horses can support.

Thirdly, as it is less expensive in its first structure.

And, fourthly, as it will keep the roads, with very little cost, in such repair as to be equally convenient for the single-horse, the post-chaise, and every other carriage.

I have not, at present, leisure to send you an exact plan of it, with dimensions, &c. If, however, it should be desired, I will either procure you a draught of it, or send a model of it to whatever place you shall direct*: or if any person in particular, or the society for promoting arts in general, should desire it, I believe I could procure a workman who would enter into engagements as to its success, &c. sufficiently satisfactory to his employer.

If

* We are greatly obliged to our correspondent for this second token of his approbation of our endeavours to serve the public; and his future letters will always with pleasure be received. If this gentleman will send up to Mr. Newbery's, in St. Paul's Church-Yard, the model of his carriage, or, if he rather chuses it, an accurate draught, with a description of the whole, and the several proportions and dimensions of the parts, together with the result of his experiments, we will take care to have a plate engraved, and insert it in our work. E. N.

If this letter should be thought worthy a place in your collection, I shall be extremely glad that the amusement of my leisure hours should, in any measure, be of utility to the public.

I am, GENTLEMEN,

Your reader and admirer,

June 4, 1764.

R. L. E.

NUMBER XCIII.

*On the Benefit of sowing Wheat Seed in a dry Season unprepared,
in a Letter to the Editors.*

GENTLEMEN,

EXPERIENCE, which is the best mistress and instructress in matters which relate to husbandry, has taught me a very useful truth.

I had a few years ago a large field, containing twenty acres, which I had fallowed with great care, and prepared for sowing in wheat.

Half of this field I sowed in the usual way, foking and liming my seed; but happening not to have seed enough prepared, and other business urging me, through haste I sowed the remaining ten acres with good sound plain wheat, dry, without liming, foking, brining, or any other preparation whatever.

The season happened to be dry, and the drought continued.

The foked seed presently sprouted, and appeared above ground; but it was, the greatest part of it, soon parched, starved, and burnt up in its premature growth, so that, on this side the field, I had at harvest but a very thin and poor crop; whereas the seed on the other half lay secure, without sprouting during the long drought, and when the first rains came, grew as favourably as I could wish, and what is still better, yielded a very plentiful return at harvest.

Imagining it might be of use to my brother farmers, I communicate to them this particular through the channel of your work.

The affair above mentioned has ever since determined me, in a dry season, to sow my wheat seed naked and unprepared; and I have never once failed of success in this practice.

If

If any husbandman should reap benefit by this advice, it will give me a very sensible pleasure, and amply repay me for the little share of trouble I have had in writing to you this letter.

Before I conclude, I must testify to you my approbation of your undertaking; and I hope, for the benefit of farmers in general, that you will continue it.

I am, GENTLEMEN,

Worcester, June 1, 1764.

Your humble servant,

A. H.

N U M B E R X C I V .

A Letter to the Editors, recommending an Alteration of the Plan of the Work.

GENTLEMEN,

I Have been, ever since the publication of your First Number, a purchaser of your work, and must own that I am abundantly satisfied with the perusal of many curious pieces, which I find to be contained in it; yet you will, I hope, permit me to point out an amendment of your plan, which would, I conceive, be very agreeable to numbers of your more intelligent readers.

I have long esteemed your work a valuable repository of whatever is to be found most curious in agriculture, the arts, manufactures, and commerce: but would it not be better if you reserved it for the insertion of such pieces, and such only, as are truly deserving of the attention of the curious reader, either from the novelty, or usefulness of their contents? Many of my friends are of opinion this would be an improvement of your plan.

I do not pretend to say there are in your collection any letters totally undeserving of notice; but I cannot help remarking, that many things occur, communicated by your correspondents, which seem scarcely worthy a place in such a work; things which most intelligent farmers and country gentlemen have been long acquainted with.

Few

Few of the readers of your work want, I presume, to be instructed in common things: they read with an intention of improving themselves in their practices; and if they meet, in your collection, matters recorded, which they were before well acquainted with, they are at least disappointed in their expected improvements*.

I presume not to dictate, yet could wish to see this alteration take place, as the world would thereby be much more benefited by your excellent papers, than it now possibly can be; for how great must be the use of such a regular monthly publication, of twenty or thirty letters, all written on matters equally new and curious!

Whether you approve of my hint, or not, I shall equally subscribe myself, GENTLEMEN,

June 7, 1764.

Your constant reader,

A COUNTRY VICAR.

* We are always much obliged to such of our correspondents as favour us with their sentiments respecting the plan of our work, which we would willingly make as perfect as possible, and improve it in any proper manner that may be pointed out to us, provided it is not thereby rendered less extensively useful. We have, it is true, among our readers, many gentlemen eminent for their knowledge and experience, to whom some of the pieces contained in our work, being written on subjects by them well known, may possibly appear *almost* insipid; but it must at the same time be observed, that great numbers of our readers are plain, honest, well-meaning farmers, who know nothing of what is practised at any considerable distance from the place in which they live. We would doubtless wish to give all possible satisfaction to the first class of intelligent readers; yet must we not, in the mean time, forget the improvement of the honest farmers. Our work, as we have more than once observed, is intended as a channel of intelligence to convey the useful practices of one part of the kingdom to other places where they are not known; by which means, in the space of a few years, all parts of the kingdom will be equally improved in their methods of culture. When matters are brought to this point, then may we cheerfully embrace the plan pointed out to us by our correspondent, and admit no common things into our work, as common things will then be generally known; but till then we cannot but think it highly necessary to encourage a mutual intercourse of communication from various parts of the British dominions: we shall, however, be still careful, as we have hitherto been, not to admit any matters that are universally, or even generally known to the practical farmers, as it is their improvement which we have greatly at heart. E. R. N.

Museum Rusticum, &c.

For J U L Y, 1764.

VOLUME the SECOND.

N U M B E R XCV.

Si tibi lanicium curæ, primum aspera sylva,
Lappæque tribulique absint: ——— VIRG. Georg.

A Letter to the Editors, relative to a Premium offered by the Society for promoting Arts, for discovering a Composition for marking Sheep without Injury to the Wool.

GENTLEMEN,

IN page 389, No. LXXXVIII. Vol. I. of the *Museum Rusticum*, I observe a letter, where the writer takes a very particular notice of a premium, issued some years ago, for a composition for marking sheep without injuring the wool, as is now done by the use of pitch; in the course of which he hath given a circumstantial detail of the society's proceedings relative to that matter, yet without that due circumspection, I presume, the affair demanded.

In the recital of transactions, accuracy should always be attended to, as plain narrative is more easily acquired than elegance of style.

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It

It is probable, the writer might receive his intelligence at a second hand, and there the error begins: for when the committee tried the different compositions, by washing them in hot water and soap, he adds, *that they all failed but one; part of all the substances always adhering to the wool, in spite of such washing; instead of which it should have been said, no part of such substances were at all discharged by such washing, but all remained obstinately fixed, except one, and that one was an earth of the ochrous kind, &c.*

Why he should denounce that composition to be of the ochrous kind, I know not, unless it was from its colour; for its properties, by no means, correspond with any species of ochre, as none of that tribe can dye a colour, but, by their adhesion, act in *tota substantia*, therefore must inevitably wash out in a short time.

I hope the author will forgive this stricture, as, doubtless, his intention was to convey the best intelligence to his friend: my design, therefore, in this letter, is, to elucidate the paper already spoke of, by inserting some particulars very necessary to be known by every reader, who is desirous that such an useful discovery, as the composition now referred to, may not be laid aside, and buried in oblivion.

The society, on their publication of the advertisement for a composition for the marking of sheep, &c. confined their intentions to the two following weighty objects, *viz.* cheapness and durability; for without two such qualities its use would be totally impracticable.

The candidate, therefore, whose composition only passed the various trials made by the committee, and was by them referred for a subsequent experiment, shewed great judgment in his thus perfecting those two important motives, and adding thereto a third, *viz.* the facility of discharging it from the wool, at any period, in a common wash.

All the other substances, which have been offered for the above premium, have been compounded; some of pitch only, the candidate advising it to be beat out of the fleece; others pitch and tar: some were common plasters, others
were

were embodied with bees-wax : even colours, with drying oil, were produced, both for the last and former premiums.

The prices excluded many ; the usual bad effects, the most of them ; and the impossibility of discharging and rendering the wool clean, ALL.

Under these circumstances, the society, by an advertisement, ordered the candidate to send one hundred weight of the composition, whose specimen was marked A.B.C. D.E.F. and that the same might be put in ten casks, for the convenience of the gentlemen who might desire to make an experiment ; to which was subjoined a fuller account of the manner of using, &c. than what had before appeared to the committee : which paper, by some mistake or other, never was delivered, and, in all probability, may have been the occasion of the matter sleeping, as it now doth.

However, that your readers may partake of the advantage that may hereafter arise from the use of so valuable a discovery, and which, before this time, would have been put in practice, but for the most cogent reasons, I have procured a copy of the above paper, with an authority to communicate it in your *Museum* *.

I own, it is a little surprising the society should not come to some resolution in the matter, especially as there is only a single candidate, and so conspicuous a step made in such an interesting concern. Where there are competitors, it is difficult to preserve an impartiality ; but, in the former case, supposing any difficulties to have arisen in the proof of the success of the composition, I see not the least impropriety in the society calling in the aid of the candidate to perfect what he seems so worthily to have begun.

I am, GENTLEMEN,

Your most humble servant,

May 1, 1764.

PHILO-PATRIÆ.

M. S. A.

* We are greatly obliged to our correspondent for so important a communication, (which immediately follows this article) and shall take care to set a proper value on any future pieces he may favour us with. H.

NUMBER XCVI.

A Paper referred to in the last Article.

*To the Right Honourable and Honourable, &c. &c. &c. the
Society for the Encouragement of Arts, Manufactures,
and Commerce.*

GENTLEMEN,

IT is with singular pleasure I have complied with your order for one hundred weight of my composition for the marking of sheep, &c. And give me leave to assure you, I receive the highest satisfaction in being informed, that, amongst so many candidates, mine alone merited your farther consideration. The subsequent trials, which you have reserved for a determination, I also gladly rely upon, and frankly submit the decision to your candour and impartial judgment.

To the instructions which I sent you before, annexed to the specimen of my composition, marked A.B.C. D.E.F. I also subjoined a blanket, with those letters inserted. The three first are done with the composition you have been pleased to order; the last three with another sort, which, upon repeated trials, I was induced to reject, first, on account of the price, and ultimately, as it doth not stand the weather so well; which may be judged of, by viewing the blanket: of this kind, therefore, I have sent in no specimen, deeming it needless.

In the above paper I have said, that the composition may be had for eighteen shillings *per* hundred weight, and that the same will mark one thousand sheep. In that I am to be understood where the composition is dry: for one hundred weight of the composition-powder makes one hundred and a half when mixed up for use, which then reduces the price considerably. Instead, therefore, of one thousand, it will mark fifteen hundred sheep, or upwards, in the usual

usual manner; which is about half a farthing for each sheep.

In my enquiry relative to the discovery of compositions for the marking of sheep, &c. I have confined myself chiefly to the price, as cheapness is the prime consideration; the next, to colour: there I have conformed to red, which is the most approved of among the shepherds; yet, respecting its duration in the weather, it is no motive, as the composition may be as effectually transferred into any other colour. I have also retained the common and easy manner of marking with the iron, which is best understood by the farmer. I shall beg leave, therefore, to repeat the instructions more fully, relative to the method of using the composition, *viz.*

To every pound weight of the composition, pour on half a pint of boiling water; stir it well: the vessel to be used may be entirely at the option of the farmer. When the matter is cold, dip the iron in it, and mark the sheep in a strong and clear manner, in any part whatever. I prefer boiling water, that answering best. If what remains at any time unemployed should grow dry, it may be wetted again as before, as no time can destroy its property; and, being a powder, it will be very easily conveyed through the kingdom.

It is customary in many counties to mark twice a year, even with pitch, &c. for the various transitions of weather, particularly frosts and dews, force such friable substances to separate into hard matty knots, and by that means render the mark obscure; which inconvenience is, by my method, avoided, as it dies not only the points, but the whole body of the wool, without altering the texture or feel thereof in the least. If, by any error, there should hereafter appear a necessity to mark a second time, when the animal is in full coat, the expence will be found so trivial, as even then not to exceed the price of the materials now in use.

I shall not take up your time in reciting the prodigious advantage which must accrue to the public by so beneficial

a discovery, in the saving so much time and wool, being well apprised of your superior knowledge in those two important heads; but only add, that the composition will not wash out of the fleece in cold, or hot water only, but with a little soap, or lye, it will totally discharge without damage to the wool, and not leave the least stain behind.

I am, GENTLEMEN,

With the greatest respect and esteem,

Your most obedient,

And obliged humble servant,

May 4, 1762.

E. E.

NUMBER XCVII.

Two vulgar Errors in the Writers on Husbandry, respecting the Sowing of Grass-Seeds, pointed out in a Letter to the Editors.

GENTLEMEN,

TWO errors (which give me leave to call *vulgar ones*, not from being the errors of the country people, but of the writers on husbandry, by whom they are constantly inserted, and which, for want of the test of experience, are mere conjectures) shall be the subject of this letter.

The first is a general assertion, that the proper times to sow grass-seeds are at the latter end of the summer, or about Michaelmas.

In the year 1762, I sowed some ground with grass-seeds, at the above-directed time. The season was tolerable, and the seeds came up well, the ground being very fine. The winter was in general frosty, and much snow. The seeds, when I expected them to flourish in spring, were almost quite eradicated, only here and there one being to be seen; so I was obliged to plough it up again.

In 1763, concluding that the theory was still right, and the failure owing to the frost, I sowed another piece of ground

ground at the end of the summer with grass-seeds, and some more with saintfoin. The following winter was quite open and mild; some rains before Christmas, but good weather afterwards. The success has been the same as the year before, *viz.* a very great deficiency, especially in the saintfoin; which I have been forced to sow again.

I only mention those two trials, as the success was the same in different seasons, but have often before tried this system, persisting from an apprehension that the fault was either in the seed, or seasons, or soil; but now I am perfectly convinced, that (unless winter can be turned into summer) late sowing will not succeed once in five times, nor will spring sowing fail above once in five.

The second error in the husbandry-writers is a constant assertion, that seeds should never be sown with corn; that the greediness of the farmer, by sowing them together, is a great loss to him in the future goodness of the grass, &c.

I will not so positively (as before) insist on the falsity of this advice, but, on constant trials, will venture to say, that in light soils it is better for the land, and much more advantageous to the farmer, to sow them together.

Let ground be ever so well tilled, there will remain in it a quantity of the seeds of annual weeds: these will, on the land resting, immediately sprout, and about Midsummer become a considerable crop, running out the goodness of the soil, and smothering the seeds, (which are of a slower growth, being intended by Nature to continue longer) and, if not prevented by mowing, will shed their seeds, and fill the ground for a next year's crop.

If seeds are sown with corn, the corn, being of quick growth, prevents many of the weeds from growing; and the farmer, for the sake of his crop, will have the more gross ones weeded out: by this means the following year the ground will be clear for the growth of the grass-seeds; not to mention some advantage of the standing stubble being a shelter in winter for the young plants.

I have frequently sown, for the sake of the experiment, part of a field in one way, part in the other; and will venture to affirm, that, in general, the seeds sown with corn make the cleanest and best swarth; not but it will happen, in particular years, that the corn will damage the seeds by being too rank. I have a crop of barley just now on my ground, that I expect to ruin the saintfoin which was sown with it, but it is particular, and may not happen again, at least, I never had it so before, unless from my own mismanagement.

I have had experience in most sorts of seeds, lucern, saintfoin, ray-grass, trefoil, &c. have sown them at all times, and in all manners; and though, perhaps, the system I follow, which is founded on it, may not succeed with others, yet I will never be instrumental (as all system-mongers are) in misleading others by a misrepresentation of facts.

Timothy and burnet will have their run. The first is a rank weed, common enough in this country: the second will, I am persuaded, from the pains requisite in the management of it, enrich Mr. Rocque, by selling the seed at two shillings *per* pound, more than all the purchasers of it put together.

I am, GENTLEMEN, &c.

RUSTICUS.

NUMBER XCVIII.

*Detail of the Methods of making solid and comby Pot-ash,
addressed to the Editors.*

GENTLEMEN,

AS I am a subscriber to your work, which I always peruse with great pleasure, I had an opportunity of observing, in page 50. of this volume, among other articles for enquiry, the following.

Pot-ash—

Pot-ash—“The various kinds of ashes now usually in demand in these kingdoms, the subject of which the different kinds are made, and the process for making each kind.”

Therefore, as I am considerably concerned in the pot-ash trade, and am desirous of communicating what has come under my knowledge and experience for the public good, it will give me great satisfaction if the little information I can give you should merit a place in the *Museum Rusticum* *.

There are very considerable quantities of foreign ashes, imported into this kingdom from Russia, Spain, &c. in demand, and of different kinds; but as these come no farther under my knowledge, I shall treat only of those that do.

We have only two kinds of ashes made in our country, viz. *solid*, or *hard*, and *comby*, or *light* ashes, and both in demand for home consumption.

The subjects, of which the different kinds are made, are as follow.

Wood-ashes, which are principally made in farm-houses, &c. where wood is burnt as fuel, are bought up by the pot-ash burners, from six-pence to eight-pence, and some-

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times

* We are greatly obliged to this correspondent for the information he has given us respecting the making of pot-ash; and the more so, as we are fully convinced of the importance of this knowledge to the intelligent farmer. The writer of this note knew a farmer, in the county of Essex, who rented about two hundred pounds a year, and was thought to pay so dear for his land, that his neighbours concluded he would not hold it long; yet, to their great surprise, he had better crops than any of them, and in the space of fifteen or sixteen years got a pretty fortune; all which success he, with great justice, attributed to a pot-ash office he had erected on his ground. It is also remarkable, this farmer's land was clear of weeds, when the neighbouring fields were choked up with them. He found the pot-ash muck agree with any crop on his land, which was rather stiff and cold, though good wheat-land when properly tilled. He had amazing crops of barley, but he almost always sowed his barley on a good fallow, and a fine tilth. E.

times ten-pence, *per* bushel, corn measure*, and carried to the pot-ash office, in which are erected large fats, or vats, (containing from four to eight score bushels of wood ashes) with under-becks, and are wrought by threes; so that you have either three, six, or nine vats in every office, and for this reason:

The ashes being trod down into the vats, a sufficient quantity of water is continued to be laid on till it runs through the ashes into the under-beck. The liquor running from the first is laid on the second vat, which is one third stronger than the first; and the liquor of the second vat is laid on the third, which is also one third stronger than the second. When it has thus run through the third vat, the lees, as the liquor is then called, is supposed to be strong enough for burning; but the strength is proved by weighing the lees in small quantities †.

The lees thus made is then put into a cistern, or cask, set into the ground level with the floor of the office, in which a person is employed in steeping of straw for the burner, till all the lees are sucked up. At the same time another person is employed in burning that straw, so taken out of the cistern; which burning will produce either solid or light ashes, whichever the intention is to make.

Now, if I would make solid ashes, the lees must be made as I before described; and I would burn up those lees with peas or bean straw only. But if I chuse to make light or comby ashes, (of which we make by much the greatest quantity, and of this kind of ashes, I believe, the finest in the kingdom) I would proceed as before in making the lees, with this difference only; they must be stronger, and instead of peas and bean straw, I would burn barley, wheat, and clover straw, mixed with a little peas straw.

After

* Wood-ashes in Essex are bought up for this purpose at five-pence to seven-pence *per* bushel. E.

† Our correspondent would oblige us by letting us know how much a given quantity of the lees ought to weigh, when fit for burning, either for the hard or comby ashes. E.

After the vats are run through the third time, they are emptied, and the ashes, which are called *pot-ash muck*, make excellent manure for some kinds of soil, particularly cold, and the loose woodcock soil *.

From this manure I have seen prodigious crops of corn, especially peas; and from the following method :

After the peas are set, pot-ash muck has been cast by hand over the land, and afterwards run over with a bush-harrow, which fill up the holes, or cavities, in the land, with the ashes; and this I never knew fail.

The principal inducement with us to make pot-ash is, for the muck; and this is evident from an observation I have often made, that no body makes pot-ash but those whose land requires such manure.

If this account does not sufficiently answer the enquiry above mentioned, I shall be very ready to give any farther information in my power †.

I am, GENTLEMEN,

Your constant reader,

And well wisher,

Stow-Market, Suffolk,

J. R.

June 14, 1764.

* We should be glad if this gentleman would particularize all the different sorts of soil to which this manure is adapted, and inform us to what crops it is of most benefit. E

† We shall be well pleased to hear from this gentleman as often as he chuses to favour us with his letters. E. R.

Medium Price, per C. wt. at

Years.	London.		Portsmouth.		Plymouth.		Chatham.		Dover.	
	S.	D.	S.	D.	S.	D.	S.	D.	S.	D.
1712	31	9	36	6	27	10			31	0
1713	30	9	31	0	24	3			30	0
1714	29	10	32	0	23	6				
1715	28	0	30	0	23	6				
1716	31	3	32	0	26	0			30	0
1717	30	9	33	0	28	0			32	6
1718	29	10 $\frac{1}{2}$	33	0	26	6				
1719	27	6	29	6	23	1 $\frac{1}{2}$			32	0
1720	37	9	35	0	24	10 $\frac{1}{2}$				
1721	43	3	42	0	28	6				
1722	31	0	28	0	26	0				
1723	24	0	23	9						
1724	31	0	30	0	17	11				
1725	34	6			26	10 $\frac{1}{2}$				
1726	37	6	37	0	32	0				
1727	35	6	37	6	31	0				
1728	32	0	30	0	25	9				
1729	40	6	39	6	28	0				
1730	29	3	29	6	25	2 $\frac{1}{2}$				
1731	24	5	25	6	20	10				
1732	19	0			18	8				
1733	25	0	25	0	19	2				
1734	23	5 $\frac{1}{2}$	24	0	21	5 $\frac{1}{2}$			24	6
1735	21	2 $\frac{1}{2}$	23	6	19	11				
1736	23	11	23	8	19	11				
1737	22	6			20	6				
1738	30	1	30	0	21	0				
1739	25	9 $\frac{1}{2}$	29	7 $\frac{1}{2}$	23	2 $\frac{1}{2}$				
1740	31	0 $\frac{1}{2}$	33	6 $\frac{3}{4}$	25	6 $\frac{1}{4}$			31	6 $\frac{1}{2}$
1741	36	3 $\frac{1}{4}$	38	4	25	3 $\frac{1}{4}$				
1742	32	9	31	9 $\frac{1}{2}$	32	9 $\frac{1}{2}$			31	10 $\frac{3}{4}$
1743	27	2 $\frac{1}{4}$	26	10	24	6			26	10
1744	22	5 $\frac{1}{4}$	22	10 $\frac{3}{4}$	21	9			22	8
1745	21	9 $\frac{1}{4}$	22	9 $\frac{1}{4}$	19	6 $\frac{1}{4}$			23	6
1746	24	8 $\frac{1}{4}$	24	6 $\frac{1}{4}$	20	4				
1747	24	0 $\frac{1}{2}$	25	3 $\frac{3}{4}$	21	3				

Medium Price, per C. wt. at

Years.	London.		Portsmouth.		Plymouth.		Chatham.		Dover.	
	S.	D.	S.	D.	S.	D.	S.	D.	S.	D.
1712	23	10	22	5	20	3	21	9	22	9
1713	23	1	20	6	17	6	19	11	22	6
1714	21	10	21	0	18	3	22	6		
1715	23	3	21	3	16	6	19	10		
1716	23	9	21	$1\frac{1}{2}$	18	$4\frac{1}{2}$	20	9	20	0
1717	22	0	19	6	19	0	20	0	20	9
1718	23	0	24	3	18	8	20	0	21	9
1719	24	$7\frac{1}{2}$	21	$4\frac{1}{2}$	18	$10\frac{1}{2}$	20	4	22	0
1720	29	3	25	5	17	$10\frac{1}{2}$			25	6
1721	21	9	23	$4\frac{1}{2}$	20	$0\frac{1}{2}$			26	0
1722	26	9	18	0	17	0				
1723	18	0	17	0	13	6				
1724	21	6	20	0	11	11				
1725	20	8	19	11	16	6	17	0		
1726	26	$1\frac{1}{4}$	25	3	20	5	22	6		
1727	21	9	22	0	18	0				
1728	19	$7\frac{1}{2}$	20	0	18	11	18	6		
1729	26	0	22	6	20	8	28	0		
1730	18	6	19	6	17	0				
1731	18	3	19	6	16	6	18	6		
1732	16	9	15	6	13	0				
1733	16	1	16	$4\frac{1}{2}$	15	0	14	9	18	8
1734	16	5	16	3	16	2	14	4	18	5
1735	13	3	15	2	13	0	14	11	16	5
1736	13	7	14	8	12	11				
1737	13	5	15	0	13	9				
1738	18	7	17	1	18	0	18	$0\frac{1}{2}$	17	7
1739	18	$1\frac{1}{2}$	18	$5\frac{1}{2}$	19	$3\frac{1}{4}$	18	$4\frac{3}{4}$	19	$11\frac{3}{4}$
1740	23	$7\frac{3}{4}$	23	$7\frac{1}{2}$	22	$3\frac{1}{2}$	20	$9\frac{1}{2}$	24	$8\frac{3}{4}$
1741	24	$9\frac{1}{2}$	23	7	22	$6\frac{1}{4}$	24	$7\frac{1}{2}$	26	$10\frac{1}{2}$
1742	24	4	25	1	22	$5\frac{3}{4}$	22	$11\frac{1}{2}$	26	$4\frac{3}{4}$
1743	19	$2\frac{1}{2}$	20	$7\frac{1}{2}$	19	10	22	5	20	1
1744	18	$3\frac{1}{2}$	18	$8\frac{3}{4}$	18	$11\frac{3}{4}$	22	$8\frac{3}{4}$	20	$6\frac{1}{2}$
1745	18	$9\frac{1}{2}$	18	$9\frac{1}{2}$	17	$6\frac{3}{4}$	23	$4\frac{1}{4}$	19	$7\frac{3}{4}$
1746	21	$3\frac{3}{8}$	21	4	19	$11\frac{1}{4}$	24	2	22	$5\frac{3}{4}$
1747	19	$4\frac{1}{4}$	21	$0\frac{1}{4}$	20	$3\frac{3}{4}$	20	$9\frac{1}{4}$	21	5

NUM-

NUMBER CI.

An Account of the Prices of Peas, as contracted for from Time to Time by the Victualling-Office, commencing Anno 1683, which is as far back as Books can be had.

Years.	Medium Price, per Qr. at									
	London.		Portsmouth.		Plymouth.		Chatham.		Dover.	
	S.	D.	S.	D.	S.	D.	S.	D.	S.	D.
1683	27	9								
1684	31	6								
1685	35	0								
1686	24	6								
1687	20	3								
1688	20	6								
1689	20	9								
1690	19	0					18	0		
1691	15	0					18	0		
1692	29	0			28	0	26	0		
1693	36	0					37	0		
1694	29	6					32	0	30	3
1695	28	0					24	0	29	3
1696	30	0					36	0	34	0
1697	34	0	32	0			35	0	35	0
1698	38	0	36	0			40	0		
1699	38	0	40	0						
1700	38	0	42	6						
1701	27	6	29	0	39	0	26	0	29	0
1702	27	6	29	0	28	8	27	3	28	6
1703	23	6	25	0	24	4			20	6
1704	25	3	30	0	26	8				
1705	26	0	25	0	23	4	24	0	23	0
1706	24	3	34	6	31	0	27	0		
1707	23	6	27	6	26	0	26	6		
1708	26	6	29	9	28	0				
1709	30	9	46	0	70	0				
1710	42	6	56	6	66	3				
1711	46	6								

Medium Price, per Qr. at

Years.	London.		Portsmouth.		Plymouth.		Chatham.		Dover.	
	S.	D.	S.	D.	S.	D.	S.	D.	S.	D.
1712	27	4 $\frac{1}{2}$	30	0	34	0			32	0
1713	24	9	28	0	35	0	26	0		
1714	33	9	32	8	38	0	29	0		
1715	30	9	30	10	32	0				
1716	27	0	28	6	32	8			25	0
1717	21	9 $\frac{1}{2}$	26	0	22	8				
1718	22	4 $\frac{1}{2}$	23	4	24	0			23	6
1719	28	9	33	8	38	4				
1720	33	0	41	4	42	8				
1721	28	3	29	0						
1722	22	6	24	0			23	0		
1723	22	3	31	4	29	4				
1724	28	3	32	0						
1725	30	6	24	0	36	0				
1726	31	0	34	0	36	0	34	0		
1727	27	0	35	6	34	0				
1728	31	6	35	0						
1729	30	1 $\frac{1}{2}$	29	9	26	9				
1730	22	1	21	0						
1731	25	5 $\frac{1}{2}$	23	6	24	0				
1732	21	0								
1733	21	3 $\frac{1}{2}$	24	0	28	0				
1734	20	3	24	0	24	9			23	6
1735	20	7 $\frac{1}{2}$	22	2	23	6			21	6
1736	21	10								
1737	33	3	30	0						
1738	28	1 $\frac{1}{2}$	30	0	44	0	21	5	28	6
1739	24	1 $\frac{1}{4}$	23	4	25	0			26	0
1740	29	11 $\frac{3}{4}$	25	6					26	7 $\frac{1}{2}$
1741	33	2 $\frac{3}{4}$	38	10					33	8 $\frac{1}{2}$
1742	26	3 $\frac{1}{2}$	35	6	30	9			23	10
1743	23	1 $\frac{1}{4}$	22	0					21	6 $\frac{1}{2}$
1744	19	9	21	4					17	5
1745	21	2 $\frac{3}{4}$	20	8	20	9			22	0
1746	23	11 $\frac{1}{8}$	27	8			23	6	21	4 $\frac{1}{2}$
1747	21	0 $\frac{3}{4}$	28	0	28	3 $\frac{1}{4}$			19	6

NUMBER CII.

An Account of the Prices of Oatmeal, as contracted for from Time to Time by the Victualling Office, commencing Anno 1683, which is as far back as Books can be had; and of Oats contracted for at the Port of London.

Years.	Medium Price, per Qr. at									
	London.		Portsmouth.		Plymouth.		Chatham.		Dover.	
	S.	D.	S.	D.	S.	D.	S.	D.	S.	D.
1683										
1684	26	0								
1685	35	0								
1686	28	0								
1687	28	6								
1688	28	6								
1689	27	6								
1690	27	0								
1691	27	6								
1692	33	6								
1693	39	6					39	0		
1694	40	0					40	6		
1695	34	0					34	6		
1696	38	0					40	0		
1697	35	9	36	0			31	0		
1698	34	6	36	0	39	4				
1699	41	0	36	0	37	0	44	0		
1700	40	6	41	6	34	0	44	0		
1701	31	3	31	0	28	0	31	6		
1702	29	9	28	0	26	0	33	6		
1703	26	10 $\frac{1}{2}$	23	0	20	0	25	0		
1704	29	0	24	0	21	0				
1705	29	6	27	6	26	6	29	3		
1706	30	0	40	0	26	0	29	3		
1707	29	0	28	0	21	0	24	6		
1708	30	9	31	6	25	0				
1709	38	0	36	6	38	0				
1710	42	0	53	0	45	0				
1711			46	0	43	0				
1712	34	9	32	0	22	8				
1713	28	1 $\frac{1}{2}$	28	6	19	10				
1714	32	7	31	4	29	4				
1715	30	0	25	4	24	0	26	0		

Medium Price, per Qr. at

Years.	London.		Portsmouth.		Plymouth.		Chatham.		Dover.	
	S.	D.	S.	D.	S.	D.	S.	D.	S.	D.
1716	26	9	24	8	24	4	26	6		
1717	28	6	22	4	21	0	27	0		
1718	32	3	23	4	24	8	29	6		
1719	38	3	29	4	29	8	36	9		
1720	37	$7\frac{1}{2}$	30	8	31	0				
1721	32	$10\frac{1}{2}$			28	0				
1722	35	6			24	0				
1723	33	9								
1724	32	6			34	8				
1725	28	0	26	8	30	0				
1726	28	9	28	8	26	0				
1727	30	0	26	8	24	0				
1728	34	6			29	4				
1729	40	6			29	8				
1730	27	$10\frac{1}{2}$			21	0				
1731	29	6			23	0				
1732	32	$5\frac{1}{2}$			20	0				
1733	26	$10\frac{1}{2}$			22	0				
1734	28	3	24	7	25	0				
1735	33	3	26	0	23	0				
1736	30	$10\frac{1}{2}$								
1737	27	$7\frac{1}{2}$			22	0				
1738	27	$2\frac{1}{2}$	23	4	22	4				
1739	29	5	22	8	20	4				
1740	40	$6\frac{3}{4}$	33	8	31	4				
1741	40	8	38	4	34	0				
1742	29	$9\frac{1}{2}$	26	0	25	10				
1743	28	$2\frac{1}{4}$			24	0				
1744	31	$6\frac{1}{4}$	22	6	19	5				
1745	36	$0\frac{1}{2}$	25	$3\frac{1}{4}$	22	0				
1746	34	$1\frac{3}{4}$	24	1	26	2				
1747	30	0	19	10	17	4				

Oats were contracted for, per Qr. at the Port of London,

	S.	D.
In the year 1744	14	$0\frac{3}{4}$
1745	15	$5\frac{3}{4}$
1746	13	$5\frac{1}{4}$
1747	11	$4\frac{3}{4}$

NUMBER CIII.

Horse-Stale, &c. recommended to be preserved for Manure, in a Letter to the Editors.

GENTLEMEN,

HAVING read in your collection a letter, which mentions the great benefit resulting from the use of the drainings of a dunghill as a manure, permit me to recommend to your notice a manure of a nature somewhat similar to that above mentioned.

I have long kept a considerable inn on the great northern road, and find it for my advantage to hold in my hands a farm in the town in which I live, for the sake of supplying my family with bread-corn, and my own horses, together with those of my customers, with good oats and sweet hay.

My method of farming this land differs greatly from the practices of the land-holders in my neighbourhood. They cease not to condemn me, though they cannot, unless they are wilfully blind, but perceive, by the largeness of my crops, the superiority of my methods.

I caused, some years ago, in the lowest part of my inn-yard, a large reservoir to be dug, twenty feet square, and fourteen or fifteen feet deep. The soil in which this was dug being rather porous, I had it lined with wet clay, as if I had been making a fish-pond, and afterwards lined throughout with hard bricks, set in terrace-mortar.

When this was done, I had the drains from all my stables, and my cow-house, conducted to this reservoir, as well as a capital drain from my kitchen. The reservoir was covered over with some stout beams, and thick oaken plank; an aperture being left, wherein to fix a strong pump.

By this contrivance I preserved the horse-stale made in the stables, which was very considerable in quantity, as
well

well as all the pot-liquor, brine, fuds, and chamber-lye, made in my house.

This compost, if I may so call it, is my best manure; but it requires some little caution in using it.

I apply this manure to all my crops, indiscriminately, and find it succeed with all; the only danger being the overdoing it. When I lay on this manure, I get the water-cart first half filled with pond water, and then, bringing it to the pump above mentioned, complete the filling it with the contents of the reservoir: this I find a good method of correcting the great heat of the manure in question, which would of itself, in particular seasons, be apt to burn some crops.

I find this manure to be of particular service to me in procuring a large burthen of grass in my up-land pastures, and even in my meadows; but in all my grass ground I begin laying it on immediately after Christmas, and have completed the dressing before the end of February. I find this the best season for doing it, on many accounts, particularly, as the spring-rains, soon succeeding, wash off from the blades of the grass the saline particles, which would otherwise be disgustful to the cattle.

When I dress my wheat with this manure, I chuse to do it something later; for instance, in the month of April; remembering always to correct the heat of the manure with water, as is above noted.

On my barley I sprinkle it still later, that is, in May for the most part, and find these methods to succeed well.

Now, as to the manner of my sprinkling this manure, it is as follows.

At the tail of the water-cart I have two leather pipes fixed, about four feet long each. At the end of each of these pipes is fixed a tin rose, somewhat like those used on watering-pots. These roses are fastened with some strong rope-yarn to the two ends of a strout stick, which keeps them about half a yard asunder: to the middle of this stick is tied one end of a strong line, about two yards long.

When

When the cart comes into the field, the horses are put into the track they should go in, and, if they are handy, and are used to the business, they will go on in a straight line, or, if they vary, be easily set right by a word from the boy behind the cart. This boy, as soon as the horses move forward, takes hold of the rope above mentioned, and by means of it keeps swaying the roses from side to side, and thereby sprinkles the land to a considerable width, at least twice the width of the watering-cart.

My reason for preferring this method is, that my land is less trod, and my crop less damaged, by it, than it would be by fixing a perforated trunk at the cart's tail, as, in the last-mentioned method, only one width of the cart is sprinkled in one turn.

I find many advantages in this manure, to the use of which I am so bigoted and infatuated, as my neighbours term it, that I lay no yard-dung on my land, but sell all that I make in my stables to the farmers who prefer it; and by this means I raise a sum no ways contemptible every year.

Were you to look over my land, which is under two hundred acres, you would be pleased to see how clean it lies, and how clear it is of weeds; though, when I first took it into my hands, which is about fourteen years since, the crops were almost devoured by them, and the soil greatly impoverished.

Have I not then, from the circumstances I mentioned, great reason to conclude, that the cleanness of my land is owing to my never using yard-dung as a manure, which certainly always contains numberless seeds of weeds? and the goodness of my crops cannot, with any degree of justice, be attributed to any thing but the constant and almost invariable effects of the contents of my reservoir, especially if we add, that I am no ways deficient in taking care that my lands are at all times properly tilled, and seasonably husbanded.

So much for the effects of this manure on my farm. I am now to inform you, that I receive, in proportion, as
much

much benefit from it in my kitchen-garden, where I also refrain from the use of yard-dung, instead of which, when the ground is trenched and thrown up in winter, I give it a thorough dressing with the manure so often mentioned.

This, by the subsequent digging, when the land comes to be levelled, is well mixed with the soil, which never fails yielding me plentiful crops of pulse and kitchen ware; and what is more, my cabbages, beans, peas, &c. are much sweeter than those raised in my neighbours' gardens, which are annually enriched with abundance of rotten horse-dung.

I cannot help, on this occasion, mentioning one garden crop, which is, in a very particular manner, adapted to receive superior benefit from this manure: the crop I mean is onions, which come much earlier with me than my neighbours, and are larger and sweeter than any I can procure in this country, or have seen elsewhere, those imported from Portugal excepted.

Another great benefit I receive from this manure in my garden results from sprinkling with it my asparagus beds, as by this means the plants appear earlier, the heads are larger, and not a bit less sweet, than those raised in the natural earth, without any manure whatever. This, you will say, is a considerable advantage; yet do I annually experience it; and it often gives me singular pleasure to provide my travelling customers with a dish of asparagus a week, or perhaps ten days, before they can be procured at any inn within thirty miles of the town where I live.

I find this manure also of great benefit to my fruit-trees, as well standards as those which are planted against walls, or espaliers; but to use it in this intention requires great caution, for, when I first tried it, I killed three or four fine thriving young trees by applying it too strong: since that time, when my fruit-trees require nourishment, I mix three parts of pond water with one of the contents of my reservoir above described. Vines will, however, bear it a great deal stronger; for I have several times applied
this

this manure to them, even unmixed with water, without sensible injury.

I am, GENTLEMEN,

Your constant reader, and humble servant,
Great North Road, An INN-KEEPER.

July 3, 1764.

NUMBER CIV.

Of the Impropriety of not setting real Names to the Letters to the Editors of the Museum Rusticum, &c.

GENTLEMEN,

YOU have, from the very opening of your design, expressed your desire that your correspondents would set their real names to the letters they address to you. The reasons of such desire are, indeed, very obvious: for whenever the rank of the writer is considerable, either on account of *fortune, literary ability, or any other commendable quality*, greater attention will probably be paid to his *reasonings*; and the example of applying the mind to researches into subjects of agriculture and commerce, will probably have more influence.

But if this be the case, gentlemen, as it evidently is, with regard to the *reasonings* contained in letters addressed to you, how much more with regard to *experiments alledged*? These *facts* are no otherwise to be depended on than in proportion to the *credit* of the relator: and how shall we judge of the credit of a *nameless person*? We may guess, indeed, at the temper of a man from the style of his letter, and think we see more or less marks of *benevolence* in one than another, and, consequently, be strongly inclined to pay more regard to the assertions of one of your *nameless correspondents* than another, especially if the assertions of *Clericus* happen to contradict those of *Rusticus*. But still we only guess.

When a man gives his *name*, and *place of abode*, he is easily called upon to make good his assertions with regard to facts; and, if he does not, his credit must sink. But a nameless man has *no credit* to lose: he need only change his *travelling name*, when he cannot prove the truth of his assertions, and proceed to correspond with you again on a *new stock* of credit, (as many a broken and pieced tradesman does) and again impose on the public.

The *intelligent public* need not be told, that men engaged either in *agriculture* or *commerce* may have many *private* interests to advance by misrepresentations of facts in any branch of either; and we may add, that there are many men who take a pleasure in the mere act of imposing on others, sufficient to induce them to relate false experiments.

It is well known that *Charles* the Second, though really a *lover of natural philosophy*, and an avowed patron of that society which thought itself honoured by his name, sent to the assembled members for a solution of a *phænomenon*, which he asserted himself to have remarked, and which the whole body were puzzled to account for, till one gentleman, more sagacious than the rest, observed, that they had a *witty*, as well as *wise* patron, who might kindly design to put them upon their guard against a credulity in relation to experiments; and that therefore it became them to enquire into the *fact* before they attempted to account for it, though asserted by his majesty. They did so; and the reader is before-hand with me in concluding, with reason, that the experiment was found false.

I know not whether you will have many, or even any, correspondents who will relate experiments to you falsely, in order to put you and your readers on their guard; but it is nowise improbable, that you may have many who will misrepresent facts for the sake of their own interest, or to gratify the *witless pleasure* of *humbugging*.

There appears then great impropriety in your *sensible* and *honest* correspondents concealing their names; and though much *indulgence* is to be given to the *timidity* and *inexperience*

of youth, yet less can be yielded to the *maturity* of *lettered age*, which (you teach us) is to be found among your *nameless correspondents*; of which fact you may be well assured by a knowledge of the hands of your correspondents, compared with known pieces.

The *tender delicacy* of some worthy men, who cannot easily determine to appear in their proper persons among any croud, may be entitled to some apology. But, in general, the impropriety of addressing you without *real names* must appear from the foregoing considerations: and I heartily wish that a just weighing of them may incline any one *sensible and honest*, but yet *nameless* correspondent of yours, to declare his name for the public good. Sure I am, that the *striking propriety* of so doing, in order to give authority to any facts I might mention, alone induced me to subscribe my name to my first address to you, and to all subsequent ones.

The well-known track of my *studies and publications*, for about twenty years, may convince you that I could not subscribe my letters to you with the *vain desire* of being *known*; though, I will confess, there are *few*, if *any*, tracks of learning, (except such as are immediately relative to my profession) in which I would sooner wish to establish an *honest fame*, than those which lead to *useful discoveries* in *agriculture and commerce*.

The reasons which may deter many of your correspondents from declining their names, seem to me as obvious as those which, perhaps, ought to determine them to *subscribe their real names*, &c. When a man sets his name to his writing, every censure of it becomes *personal*; and if that censure, however *ill-grounded*, be delivered in a *lively and specious* manner, many readers will rather *laugh at*, than *reprove*, sallies which entertain. And the petulance of *nameless* writers, safe *only* in their obscurity, is now advanced to such a pitch, that it is nowise wonderful if men, even no novices in controversy, choose not to *expose* themselves to be *bemired* by concealed opponents.

Had

Had I suffered considerations of this sort to influence me, I should either not have corresponded with you at all, or have corresponded with you in masque.

I had experienced enough of the virulence of *nameless scribblers* *, only for owning myself a champion of those *civil and religious* rights which were secured to us at the *glorious revolution*. But as *reflection* and *habit* had given me firmness enough to despise the *foam* of *impotent assailants*, so, gentlemen, I really believed I should not incur much of this *troublesome petulancy* by becoming your *confessed correspondent*; yet I find in your collection as extraordinary an attack against me as can be imagined. A correspondent tells you, in the *most abrupt* manner, at the close of a long letter *on a subject very different from any I have wrote upon*, that he should attack some *assertion*, or *assertions*, of mine; but as I have set my name to them, and he *will not own* his, the attack would not be *fair*. (See p. 48 of Vol. II.) Surely, if it was *not fair* to make the attack, it was *not fair* to mention his power to make it. Would you tell any man that you could *stab* or *pistol* him in the dark, but that you think it not *fair*? If he were not a fool, I know what his conclusion would be, and, I am sure, I need not mention it. What man of sense would not rather answer to a *direct* and *particular* charge, than labour under an *indirect* and *general* one?

Præterition is well known to be a most successful artifice of orators; and when *old ladies* intend to indulge their utmost malevolence, they assure us they could tell a sad story against such an one, but are restrained by their *good-nature* and *charity*.

It is always of consequence to detect *false reasoning*, and that in proportion to the importance of the subject on which it has been employed.

Y y 2

Mistakes

* The authors, or rather author, of the *Critical Review*, in their, or his, account of my "*Vindication of the Revolution*," &c.
COMB.

Mistakes in agriculture are of great importance to the public; and therefore, if errors concerning any branch of it are propagated in print, (and especially in publications likely to become so extensive as your work) it is *laudable*, if not *absolutely* the duty of those who can, to correct them; and if the corrector has true candour, and its concomitant virtues, he will, if possible, first communicate his corrections to the mistaker *privately*, especially if the mistaker is known, and easily come at, and still more, if himself determines to be *nameless*.

Your correspondent knew my address from your publication; and if he had sent me any confutation of any error in my * *reasoning*, I hope I have candour and regard for truth and public utility sufficient to have *publicly kissed the rod*, and owned, so far as the concealment of his name would allow, the hand of my kind corrector.

But as he has chose a *directly-contrary* and *most invidious* method, that of charging me in *general* with *false reasoning*, I must inform him, that, after the *strictest* and *most im-*
partial

* Mr *Rusticus* declares himself charged against my *logical defence*. Now this expression is only a specimen of that cant by which *superficial* writers hope to impose on *unwary readers*. A *logical defence* is thought to favour of *pedantry*; yet, after all, it is only a *rational defence*. If I had called my *defence logical*, it would have been no objection to its *goodness*. But this is the name which Mr. *Rusticus* graciously bestows upon it, in order to *ridicule* it. Did I draw out this defence in the *logical form* of *syllogisms*? If I had, I had been blameless, provided the perplexity of the argument required such *developement*. But I did no such thing. I only observed, in the style of true philosophy, that *causes* and *effects* should be *proportional*; and to apply the axiom, that if ploughing-in long stubble be the cause of thin crops, they should *always* follow such ploughing-in. To reason otherwise, is to suppose *Tenterden-steeple* the cause of *Goodwin-sands*. I will remind Mr. *Rusticus*, in return for his wit in styling my observation a *logical defence*, that it has been observed, very naturally, that "none are so great enemies to *reason* or *logic*, as they who know least of it." COMB.

partial re-examination of my reasoning on the subject he refers to, I fear not his * *criticism*;

And am, GENTLEMEN,

Your fair correspondent,

East-Newton,

THOMAS COMBER, Jun.

In the North Riding of Yorkshire,

April 16, 1764.

* Mr. *Rusticus* has told us, that he should only have said a few words against me. In the few he has said, he has given notable specimens both of his *criticism* and *logic*. He has only taken the cart for the horse; a mistake of some consequence in agriculture, though he thinks slightly of it in *criticism* and *logic*. My defence, he says, is of my *slovenly neighbours*. Now (not to take notice that my defence is a defence of all corn-growers who plough in *shorn, long, stubble*, and these are much the majority of corn-growers in the kingdom) these *slovenly neighbours* of mine are, in his account, the farmers of the East-Riding of Yorkshire; for he sagaciously adds, “No one ever recommended “the farmers of the East-Riding of Yorkshire” (for patterns of neatness he must mean, if he means any thing). But these, so far as I mentioned, or know any thing of them, *mow their wheat*, and consequently come not under the denomination of *slovenly farmers*, for ploughing in long stubble, which they have not. My nearest neighbours are those who live about fourteen miles from the borders of the East-Riding. The readers will not now be apt to entertain any high opinion of Mr. *Rusticus*’s judgment of the *neatness* of the farmers of the East-Riding, when they see him thus egregiously mistaken about them. At some time I may give the editors of the *Museum Rusticum*, &c. an account of the general management of those farmers. At present I need only oppose assertion to assertion, and say that I know no one, except *Rusticus*, who does not recommend them as patterns, if they know them. But whether they be such or no, is nothing to my purpose, Mr. *Rusticus* having taken *trim* for *tram*. I think the motto of the Scots, “Nemo me impune lacessit,” very necessary in this petulant age, so productive of scurrilous writers without names. The thistle flourishes in good soils; whether it flourishes in the fens of Lincolnshire, I know not. COMB.

NUMBER CV.

Concerning Extracts from Writers on Agriculture, proposed to be inserted in the Museum Rusticum, &c.

GENTLEMEN,

AS all the numerous papers which I have addressed to you have been originals, I may appear an *equitable* judge when I advance something in favour of your admitting judicious extracts from writers on agriculture, though already in print, into your work.

You have already many, and may probably have more, of my original pieces in your hands; and it is natural enough for a writer to wish to see his own productions, which he esteems of consequence, appear to the eye of the public. However, I own, I should be well content to have any of my pieces' publication delayed, if you can give us, in the mean time, more useful extracts from books already printed, but which we are not, in general, very likely otherwise to see.

I was led into a declaration of this sentiment (in which I believe, and hope, I am joined by many of your contributors, with regard to our respective original papers) by a note at the foot of page 139 of your present volume. As to the instance then before you, I have never seen the book, and probably the *abstract* you give us of the writer's description of the *new lucern*, may be as satisfactory to your intelligent readers as an insertion of the *extract* recommended to you by Z. Y.

All I mean to advance is, in general, that you should not think yourselves precluded, by the nature of your plan, from inserting any useful memorial, not *strictly original*. Indeed, you appear well apprised, that your plan is not so unreasonably narrow; for in the very note in question you say, that your "work is *principally dedicated to original compositions.*"

I have

I have said above, that I wish to see in your collection very useful extracts from printed books, which the generality of your readers are not likely otherwise to see. I will explain myself a little further. I chiefly mean such books, whether *old* or *new*, as are *scarce* and *dear*. And, I think, I should be as glad to see authentic accounts of facts in agriculture, &c. many ages ago, as of the present age.

One great obstacle to all improvements in science is *vanity*; and men tenaciously adhere to *bad opinions* and *practices* oftentimes because they believe them their own, and that an adherence to them makes them persons of consequence. Cure them of the persuasion that they are the inventors of these opinions, or practices, and you often cure them of the error.

Some men of great parts have endeavoured to persuade the world, that *science* is *reminiscence*; and many sober men, of *strong parts* and *deep learning*, believe, that most of what we call the *improvement of science* is rather the *revival* of it. This opinion, like almost every other, may be, and often is, carried too far, and is frequently abused by envious men of mean parts, to rob men of superior genius of the reward of their inventions. However, the more we are acquainted with history, the more inclinable we shall be to think in general, that what is called the *advance* is but the *revival* of science; and, I am sure, I find it so more and more every day.

There are few branches of science in which greater improvements are usually thought to be made of late, and especially in *England*, than *agriculture*; and this opinion, under proper restrictions, may be very well founded: yet whoever looks *attentively* and *impartially* into the old books of agriculture, will find that our fore-fathers knew much more of the matter than we are willing to think. I have some of these old books, which I value highly, both as they contain much useful matter of instruction, and as they continually teach us, of the present generation, a lesson never too thoroughly learnt, viz. *Humility*.

I was

I was lately, gentlemen, much pleased with one of these books, (it was printed above one hundred and fifty years ago) especially as the title, “The Surveyor’s Dialogue,” promised me nothing of this sort. However, the whole work being divided into six books, the fifth treats of the *true and right* use of manuring of grounds, or occupation thereof, as well in the lords as in the tenants. The initials only of the author’s name, I. N. appear in the title page. But at the foot of the epistle dedicatory to the earl of *Salisbury*, secretary of state to *James* the First, we have the following date, “At my poore house at *Hendon*, 27 *Martii*, “1610; your lordship’s ever-to-be-commanded, *Io. Norden*.” Who Mr. *Norden* was, I further know not, though I wish I did; but this I know, that he appears to have been a man of *good sense, considerable reading, great experience*, and a faculty of expressing himself *concisely, intelligibly*, and without *affectation*, (the gross fault of that age in which he wrote) and to have had a true genius for improvements in agriculture, and also to have had strongly at heart the love of his *country* and his *God*. If you, gentlemen, approve of my reasons for admitting extracts from *scarce* and *valuable* books already printed, I may, probably, at times, send you several occasional ones from this work (which I value highly) on many curious and useful subjects. At present, I shall presume so far on your favourable opinion of the transcriber’s judgment, as to persuade myself you will give a place to two extracts from the book; one, concerning the *amazing crops* of wheat which some farmers had in our author’s time; the other, concerning an astonishing burthen of meadow: and I request any of your sensible and public-spirited correspondents, or readers, to transmit to the public, by your channel, the present state of the respective countries and lands referred to in the said extracts*.

First

* We are much obliged to this gentleman for his attention. We do not, it is true, absolutely preclude extracts, where abstracts cannot well be made of the author’s sentiments; but the latter are certainly to be preferred, provided our correspondents will quote the authors they are indebted to, as they take up
little

First extract. *Surveyor*. “ You are not acquainted with
 “ the meddowes upon *Dove-bank*, in *Tandeane*, upon
 “ *Seaverne* side, *Allermore*, the lord’s meddowe in *Crediton*,
 “ and the meddowes about the *Welch Poole*; and
 “ especially a meddowe not farre from *Salisbury*, neare a
 “ *bourne* under the *plaine*, that beares grasse yearly above
 “ ten foote long: though many think it *incredible*, yet it is
 “ *apparent*, that the grasse is *commonly sixteen* foote long.
 “ It is *made* * *shorter* before cattle can feede on it,
 “ and when the cattle have fed, hogges are made fat with
 “ the remnant, namely, with the knots and sappe of the
 “ grasse.

Baylie. “ This is the strangest thing that ever I heard
 “ of; and surely these meddowes are made so good by
 “ art.”

Surveyor. “ These that I speake of, require *little* or *no*
 “ helpe at the owner’s hand, only the ayd of these rivers,
 “ and fatt of the hills overflowing, do feede them fat, gives
 “ great burthen, and verie sweete.” See page 155.

Second extract. *Surveyor*. “ You speake of the para-
 “ dice of *England* [*Tandeane*, in *Somersetshire*]; and indeed
 “ the husbandrie is good if it be not decayed since my be-
 “ ing in those parts. Now, I say, if this sweete countrey
 “ of *Tandeane*, and the westerne part of *Somersetshire*, be
 “ not *degenerated*, surely, as their land is fruitful by nature,
 “ so doe they their best by art and industry.”

Baylie. “ I pray you, sir, what do they more than
 “ other men upon their grounds?”

Surveyor. “ They take extraordinarie paines in sowing,
 “ ploughing, and dressing their lands. After the plowe
 “ there goeth some three or foure with mattocks to break

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“ the

little room, and are stripped of all the *unnecessary* ———.
 By Mr. Comber’s desire the extracts from Norden are inserted;
 but he must himself be sensible, that the whole of them might
 have been in an abstract comprehended within a very few
 words. O. A.

* By this expression, I apprehend Mr. Norden to mean
more. COMB.

“the clods, and to draw up the earth out of the furrowes,
 “that the lands may lie round, that the water annoy not
 “the feede; and to that ende they most carefully cut out
 “gutters and trenches in al places where the water is like-
 “liest to annoy. And for the better enriching of their
 “ploughing grounds, they *cut up, cast, and carry in*, the un-
 “ploughed head-lands, and places of no use. Their *hearts,*
 “*hands, eyes, and all their powers,* concur in one to *force*
 “the earth to yield her utmost fruit; and the earth againe,
 “in recompence of their love to her, vouchsafeth them an
 “*incredible increase.*”

Baylie. “What, I pray you, in quantitie upon an
 “acre, more than the ordinarie rate of wheat, which is the
 “principal graine in other countries?”

Surveyor. “They have *sometimes,* and in some places,
 “*four, five, sixe, eight, yea ten* quarters in an ordinarie
 “acre.”

Baylie. “I would think it impossible.”

I shall only, gentlemen, add a few reflections on these two extracts.

In the first place, As the fruitfulness of the meadows, especially that near *Salisbury*, is ascribed to *yet-subsisting* causes, it would be both *entertaining* and *instructive* to know if the crops are at all like that above mentioned, what methods of making the hay the occupiers of such meadows use, what the kinds of grasse are, when it is mown, how long it is freed, when the aftermath is cut, whether two crops be not taken, &c. &c.

In the second place, What kinds of manure were used, so far as tradition reaches, when the crops above spoken of were reaped, what crops are now reaped, what the management now is, what crops follow the wheat, what kind of wheat they grow, whether it is *thick-skinned*, or *thin-skinned*, &c. &c.

In the third place, Let it be stated what proportion the best known crop of wheat, in the horse-hoeing husbandry, bears to this of *eighty bushels* on the acre, and what is the difference of expence.

In

In the last place, it is much to be wished, that gentlemen, inhabiting all the different parts of the kingdom, would, by means of your work, inform each other what the crops of wheat *per acre* usually are, according to the difference of their soils and management. Thus would your *Museum* become an *universal* repository of knowledge, necessary to bring *agriculture* to the fixedness of *science* on the principle of induction. To contribute my mite, I must inform you, gentlemen, that our strongest clays, sufficiently warmed by lime, &c. produce about thirty stooks, which yield each a bushel, or somewhat less, by the acre.

I am, GENTLEMEN,

East-Newton,
May 19, 1764.

Your faithful correspondent,
THOMAS COMBER, jun.

NUMBER CVI.

A Letter from a Fen-Farmer, setting forth the great Advantages of burning Fen-Land.

GENTLEMEN,

AS I flatter myself that the letters I have troubled you with, relative to the culture of coleseed, have met with your, and some of your correspondents, approbation; I shall once more venture to say something relative to the culture of fen-lands by burning; a method which many gentlemen (and owners of fen-land) have greatly exclaimed against.

I hope the reasons I shall lay before you on that subject, may, in a great measure, convince any unprejudiced gentleman, that such are under a very great mistake, who will not let their tenants burn their fen-land.

First, I hope to make it appear, it will be much better for the land.

Secondly, That it will be so for the tenant, and also for the landlord.

In short, the proof of the first will make good the other two, which I shall endeavour to do in as few words as I possibly can, prolixity confounding both writer and reader.

I live in the neighbourhood of several gentlemen, who are large proprietors of fen-lands, a great deal of which is very ordinary, and fit for no use of consequence, unless ploughed and burnt; but the alarming circumstance of burning is so deeply rooted in them, that in their opinion no reasons can be given sufficient to convince them to the contrary.

However, I will for once venture to stem against this prevailing torrent, and flatter myself, I shall have the pleasure to see the opponents of burning slide smoothly on the tide of reason and experience.

My first proposition is, that fen-lands are greatly improved by burning.

But to enter into each particular sort of fen-land, would be a work much too large for my intention: I shall therefore confine myself to that sort of land which lies in this country, and which is absolutely necessary to be burnt, and cannot be improved by any other means; and as that sort is well known to the gentlemen owners, and to the tenants in general, I shall not trouble you to particularize it*.

I have, in a former letter, told you, that when land is ploughed for burning, the furrow, or sod, should be about an inch and a half thick; but where the land is more solid, or heavier, which is a better sort of land, an inch thick is very sufficient, and will produce more ashes than an inch and a half thick where the land is light and porous.

From this it is that arises that imaginary evil in the minds of many gentlemen, who will not, on any consideration, have their lands burnt; because say they, “If
“an

* We could wish our correspondent had explained the nature of the fen-land he recommends to be burnt, as it might have been of service to some of our readers, (particularly in Ireland) who may be possessed of such land. E.

“ an inch and half be taken off the land every time it is
 “ ploughed for burning, pray what will be the consequence
 “ in time ?

“ If I suffer my land to be ploughed for that purpose
 “ three times in a lease of twenty-one years, at the expira-
 “ tion of the term my land must certainly be four inches
 “ and half lower than at the commencement of the lease ;
 “ so that, to carry this practice on, in a few ages the lands
 “ would be all burnt away.

“ No : no argument has yet been strong enough to con-
 “ vince me but that burning land is a very great injury ;
 “ therefore I will have none burnt.”

This, I must confess, at first sight has a frightful aspect,
 and certainly would deter any gentleman from this practice,
 who, perhaps, is not at all acquainted with the nature of
 fen-land.

I will now suppose we have under our inspection a piece
 of furrow, or sod, that shall be an inch and half thick
 (but I expect the favour of all opponents to burning to at-
 tend this enquiry).

I would ask one of those gentlemen, how much lower
 he apprehends his land is by taking that furrow off? *Why,*
to be sure, he says, an inch and half; is it not plainly so?

No, sir; permit me to ask you another question, and also
 to try an experiment.

Suppose this same sod, put into a strong press, say a
 packer's press, and pressed together, to what thickness do
 you think it would be reduced? I believe it will be found
 to be not more than half an inch; and one fourth of that,
 or perhaps more, shall be grass-roots, &c. it is they that
 compose the principal part of the inch and half taken off,
 which is very evident from the few and ordinary ashes that
 the turf produces.

It therefore plainly appears to me, that the land can-
 not be said to be reduced lower than the matter to which it
 is contracted to in the press. If this may not be allowed,
 all reasoning for the future to me will be doubtful; but every
 one is at liberty to judge for himself: so that this glaring evil,
 minutely

minutely considered, is not of that fatal consequence as has hitherto been apprehended.

It is my opinion, that if a sod of the solider land, that shall be ploughed one inch thick, was to undergo the experiment of the press, it would not be reduced to less than half an inch : I rather think it might be more ; for the other, having more roots in proportion to their thickness, certainly would, on this trial, shrink more than the solider earth.

But, says an opponent, *I am still a loser of land, if I submit to your supposition.* That is certainly true, for it is impossible to produce matter from nothing ; but the loss, I hope, will be made up ?

It is allowed by naturalists, that all bodies, fossils not excepted, make a progression, or what is commonly called growing.

If that is the case, as it of a truth is known to be, may we not, with justice, admit of the growth of earth ; and may we not reasonably suppose the more porous the earth shall be, the quicker the growth ? and, as fen-land is known to be more porous than any other earth, may we not suppose the small matter of solid parts that have been ploughed off will be very soon made up ?

Says an opponent, *Why, this is all supposition, and no facts to prove this assertion. A proof of this might greatly abate my aversion to burning, which has wholly proceeded from a notion of its decreasing the land very much ; but could I once have it made appear to me that the land receives little or no loss, I, in all probability, may change my resolution as to that particular.*

Well, sir, as far as in my power lies, I shall endeavour to do it.

I believe it may not be possible to ascertain the truth of this doctrine from a horizontal observation of the surface of the land : I shall therefore beg leave to contract my enquiries into a small compass, from what I know by my own observation and experience.

It

It is the custom in the fens, to dig their firing (which they call turf) out of the land, in the following manner.

In order to come at what is called the moor, (a light, fungous sort of earth, which, if the weather prove good, will be soon fit for use) the labourer is obliged to pare off all the soil, which is sometimes six or seven inches deep, and sometimes not above three or four (in some parts of the fens the earth is not proper for turf, for it is not all fen-land that will furnish turf.)

When this is done, he proceeds to digging with a tool called a becket, fit for that purpose only.

The turfs are dug twenty-two inches deep; the paring, say, two inches; the whole twenty-six inches, or two feet two inches; a great depth!

But, notwithstanding this extraordinary depth, I have seen lands that have been dug up in this manner, and, in a few years time, become useful again, either to feed or mow, and, in a suitable season, to be ploughed, and bring very good crops.

Nay, there are old men in the fens, that have known land dug for turf a second time.

When the turfs are dug out, the parings of the first pit that is opened are thrown back again into the pit, and the paring of the second also; then the third into the second, and so on till the whole piece appropriated for that purpose is dug up.

The pits, or *turf-pools* as they are commonly called, are about four feet wide, and are dug close one to the other, so that but little land is lost.

When a piece is thus dug, it is common to level it as well as they can; that is, what few edges, or little matters, are left, are thrown in and made as level as possible: and from this assistance only of levelling, the land will rise, or grow, or what other denomination you please to give it, and, as I have said before, become useful.

If any gentleman doubts the truth of this, if he pleases to take the trouble, I will shew him a piece of land that has, in my memory, been dug up as above, on which, at this present time, corn is growing, and a promising crop; and
it

it is scarcely discerned that it is lower than the other part of the piece.

I mention this as a plain, and, I think, an uncontrovertible instance, that fen-land does certainly grow, and greatly too: and, as a further evidence of this truth, it is well known, that ditches made in the fens will soon grow up, so as to want scouring out again in about six or seven years; nay, I have known, where ditches have not been scoured out for forty or fifty years, which is sometimes the case when three or four pieces are designed as one piece, it has been difficult to trace out where the ditches formerly were.

If this also be the case, as it of a certainty is; (and I appeal to all persons, who have lived in the fens long enough to make observations on things, for the truth of what I have asserted) if land, so dug, may be useful in a few years; what great injury can be supposed from the reduction of half an inch only, and that but once in seven or eight years? When it so plainly appears that all cavities in fen-land so soon grow up, then why may we not suppose the land to grow in a horizontal direction, though unperceivable, as well as in a perpendicular one?

I shall now proceed to another objection that an opponent may make, though I do not know whether it is so much considered as the former; and that is the land *pitting*, which is thus.

It sometimes happens, that, while the heaps are burning, the seat of the heap shall burn downwards, and make a little hole, or pit; but this is not always the case: it is chiefly owing either to a particular dry season, or to a light, porous soil.

When it does so happen, I would advise the farmer, as soon as the sod is all burnt, and he finds the land pits, to spread the top of the ashes round the seat of the heap, so as there may lie about an inch thick of dead ashes; (for the top of the ashes may be out, or dead, though the bottom shall be all fire) then let the hot ashes be raked out of the hole, and laid on those dead ashes till they are cool; but be sure to scoop out all the fire.

By

By this means you may prevent the fire from spreading, for if the ashes are spread hot, it sometimes happens they will catch hold of the land again. When the ashes are cold, then spread them as in common course.

I mention this precaution, that if it should so happen, which it seldom does, the farmer may have recourse to this method of prevention, or what other he shall think better. This method of spreading the ashes is to be observed only in the case of pitting.

I shall, in the next place, say, in a few words, something as to the improvement of fen-land by burning, and prove that no other method can adapt that sort of land to the use and purposes which burning will do.

Fen-land is by nature productive of a very ordinary sort of, I do not know what to call them, whether grass, or what: however, vegetables they are, such as reed, cockspire, tansey, willow-weed, sedge, rushes, and many other such sort of trumpery, which it would puzzle the greatest botanist to find names for.

This is the natural production of the fens; and this whole country was formerly overgrown with such sort of stuff, with the addition of being almost continually drowned, till in Charles the Second's time an act of parliament was obtained for the draining of the fens, by an incorporated body, called the Corporation of the Great Level of the Fens called Bedford Level, so named from Francis earl of Bedford being chief manager, and the head of the act when first obtained; and ever since, the dukes of Bedford are the governors of that corporation.

But notwithstanding this act of parliament, the proprietors have since been obliged to apply to parliament for separate acts within themselves; that is, two or three parishes have joined, and have got acts for the draining the fen-land thereunto belonging, so that, with the original act for the fens in general, and those acts I just now mentioned, they are under two acts for draining. I made this little excursion only to give you a short account of the pristine state of the fens.

You see, from the above, the natural produce of the fens; and, contrary to all other lands, which are improved by muck, compost, marle, and other methods used in husbandry, they will have no effect on the fens; nor can any other method which is yet known, except burning, improve fen-land.

I suppose it will now be expected I should assign some reason why burning, and no other method, can be serviceable to the improvement of fen-land.

As fen-land is very light and porous, and the salts of muck are of the liquid sort, every shower of rain, which in solid land serves, as it were, to spread the salts, and mix it together, has a quite contrary effect in the fens; for, from the lightness of the land, instead of being incorporated with the soil, it drains down into the pores, and becomes of no use.

But, suppose it was not so, as the natural productions of the land are of such a sort as to be entirely destructive to every kind of crop, I imagine they would receive such nourishment from the muck, as would add vigour to their vegetation, and put a stop to every thing but themselves.

On the contrary, the salts produced from the ashes, being of the earthy kind, do not, like the salts of muck, descend; but the ashes being spread on the land, and immediately ploughed, are incorporated with it, and they ferment together, to the service of the crops they were intended for, and will generally last for three crops, and no more.

The usual method is, with the last crop, to lay down the land with some sort of feeds; but that depends, in a great measure, on the inclination of the farmer.

The feeds generally sown are rye-grass: it is very suitable, for they will stand wet land better than any other that I know of; and it is a grass that grows early in the spring, and in that particular is a desirable sort. A mixture of Highland hay-seeds with some *onesuch* will make a good addition.

If your land is safe from being wet in winter, sow on each acre one sack of hay-seeds, and one bushel of rye-grass,

grafs, with about ten pounds *per* acre of nonesuch, or white Dutch clover-feed; but, if you are subject to be wet, more rye-grafs, and less hay-seeds.

Timothy-grafs, I find, is much recommended to be sown on wet lands; and, if it answer, according to the character given of it, it is certainly much better than any seeds to us at present known; but as I never saw any of it, I can say nothing to it but by recommendation, yet will, the first opportunity, make trial.

However, if it was not laid down with seeds, the land would produce nothing but what I have already described; and even with sowing seeds, it will not hold above three or four years, (unless the land be pretty good) and then it will begin to turn to its pristine state; for the land of itself having but little strength, it cannot long support this rape, as it were, but will return to its nature again; for, as a modern poet very justly observes,

“ Let us all do what we will,
“ Nature will be nature still.”

I hope I have now made appear the absolute necessity of burning fen-land, and the cause so greatly objected to, the lowering the land, appear in a more favourable light; and that fen-lands cannot be improved by any other means than by burning.

There is one thing more to be observed: you will find, when the land has been laid down about four years, the seeds will greatly decline, and then (as I have said before) nature will begin to re-instate herself, and bring forth tansey, rushes, thistles, and other rubbish already mentioned; but to put a stop to her proceedings, and to make the land continue useful, it must be ploughed and burnt again, which will come in course once in seven or eight years.

Thus, and thus only, is fen-land to be kept in due course of culture: by this means it will always render agreeable services both to landlord and tenant; and, from a regular succession of things, the tenant will be able to pay his rent better, the landlord will be pleased with him for so doing, and all things will slide on easy and pleasant;

and the land will last, under this course of culture, till earth and sea shall be no more *.

I am, GENTLEMEN,

Middle Level,

Your most humble servant,

June 1764.

J. J.

NUMBER CVII.

Remarks on mowing Wheat, with a Method of securing it from Damage in the Field when cut.

GENTLEMEN,

AS the manner of severing wheat from the soil, together with the likeliest means to secure it when cut, and whilst in the field, from the damage it is liable to sustain from wet, have very deservedly been the subjects of many papers in this collection; and, though every sentiment therein published I could willingly hope to be the effect of a desire, in the person communicating, to promote the public good, yet I am very apprehensive some of those observations, or informations, are not the result of experience, but speculation; it remaining as yet a query (at least with me) whether all the persons, who have communicated to you on these subjects, have made the necessary remarks on either, so as to point out the advantages or disadvantages that will accrue to the practical farmer.

Therefore, being one who still continues to write agreeably to the maxim I set out with, I shall once more offer my sentiments; not to boast of my paternal estate, my present possessions, or the antiquity of my family, or coat-armour; nor would I make it a point to decry any thing I cannot clearly comprehend, or find fault with things for which I can propose no amendment; either being an indication of mind in bondage to the vain emulation of conceitedness.

I cannot

* We hope to hear often from so good a friend, and able a correspondent, as this gentleman proves himself to be. E.

I cannot yet perceive any difference, in the intrinsic value of any thing which may be offered in these monthly publications, that can result from knowing from whom it came ; for every reader must, with respect to himself, either like or dislike the thing ; and if in his judgment it be useful, or may be of benefit, it should be as acceptable, if it came from one whose experience it is, though labouring for his bread, as though it came from one greatly exalted in life, and the imaginary fruit of speculation.

It is true, the name of one in an exalted station, prefixed to a publication, often recommends it to notice, though the matter contained be not worth perusal.

Having made this necessary digression, I will now proceed to offer my sentiments concerning the cutting of wheat.

A good deal hath been said about mowing it, and even much encouragement given to bring that method into practice ; which indeed, where labourers are scarce, and the corn not fully ripe, may be of some service to expedite the work without much loss to the farmer ; but when hands can be procured, and the wheat fully ripe, there is no method will ever exceed that of hand-reaping, if decency, saving, and dispatch, be considered as going hand in hand ; but if dispatch be the only thing aimed at, mowing must be preferred, though not in a very great degree.

In order to illustrate this matter, it may not be improper to lay down a calculation of the cost and loss attending the mowing and binding, and also of reaping and binding, one acre.

For this purpose we will make choice of a piece of midling wheat, say of twenty-five bushels on an acre, which may be cut with hook or sickle, and bound for 5 s. 6 d. without meat or drink. With the scythe it will cost 2 s. cutting, gathering, and binding 2 s. and raking 1 s. which makes 5 s. so that 6 d. is saved in price.

But then I would advise the reader to consider, that a considerable quantity of corn is shook out by the sudden stroke of the scythe against the straw, and trod out by the feet of the gatherer, besides many ears being at the butt of the sheaf, which must be exposed to the dampness of the earth when

set

set up in stook, if it happens to be served in that manner, and thereby very liable to grow, which, if it be a moist harvest, must be the case; for which waste and growing, 6 *d.* per acre is but a moderate allowance.

From this there appears not any thing to be saved by mowing an acre, in which work three persons are employed for a day, *viz.* two men to cut and bind, and a woman to rake; when, in the hand-reaping, the like number of hands, all men, will do the like quantity of work in a much neater and more saving manner; the corn be laid regular in the sheaves, and more free from ears in the butts of them, and consequently less liable to be mixed with grown corn, by its being stooked in a moist season.

Having made these remarks on cutting wheat, I will now propose a method practised by myself, and the generality of the farmers in this part of the county of Gloucester, for securing it in the field from damage by wet after cut and bound.

The method is thus: we frequently procure a slide, to be drawn by one horse, made of two poles about ten feet long, each fixed in the manner of a thill for a waggon, by five or six cross bars fastened by their ends in each of the poles, near the greater ends of them, but not so near the ends as to hang in the clods when drawn by the horse, which is placed between them as in a thill: bearing on the hindmost of these cross bars is a tail ladder, in manner of those affixed to carts.

Being thus provided, a stoutish lad loads on this slide from twenty to thirty sheaves or more, and with the horse draws them to some convenient spot, frequently the head-land, and there unloads them; repeating the practice till there be thirty or forty tything brought together.

When this is done, and sometimes while doing, two men are employed to stack them up in the following manner.

They lay four of these sheaves cross each other, the ears or crop of one resting on the middle or band of another; by which means the ears are preserved from the ground: then one of these men, kneeling on one knee on the crop of these sheaves, and standing with the other foot on the butts of them, proceeds

proceeds to lay other sheaves in a circular manner, being supplied by the other man with them, at the same time letting the butts of the sheaves in each ring project a small matter, till he is gotten about four foot from the ground, when he is careful to lay every ring shorter than the other, till he has brought the stack or mow to a vertix, the last laying, or ring, containing not more than six or eight sheaves, and those small, made purposely; on which, at last, a sheaf of longish straw wheat, and of midling size, being bound near the butt-end for that purpose, and the ears spread in a circular manner, is placed as a cap or hickler to defend the others.

After which we frequently shear down the mow, thus made, with a reap-hook, and carry the shearings to put under the bottom of the next stack.

The corn being thus secured may remain for months, and receive no damage from rain, or while the hands are employed in getting in the other sorts of grain, which may not be so conveniently left in the field.

As we generally bind our wheat as fast as it is cut, allowing one binder to two reapers, we carry it, and mow or stack it in this manner, the same day; weeds being no obstruction, as the butt-ends of the sheaves are exposed to the air, and very rarely any sheaf is put in the middle of the mow.

We for the most part put about a waggon-load in one of these stacks; and two men, and a boy with his horse and slide, will carry, and mow or stack, eight or more waggon-loads in a day.

As harvest is approaching, some of these hints may be of use, though dressed in a sheep's-russet coat, spun and wove in the country, and labouring under the disadvantage of a want of academical refinement clothed in sable hue.

Give me leave once more, Gentlemen, to subscribe myself

RURICOLA GLOCESTRIS.

L.

NUM-

N U M B E R C V I I I .

*Thoughts on the best Method of introducing the Mowing of
Wheat, by a Lancashire Farmer.*

GENTLEMEN,

AS I imagine that the gentleman in Northamptonshire, who last year kindly communicated to the society of arts the result of the experiments he made in the affair of mowing wheat with the French, Brabant, and Hainault scythes, will this year also make experiments on the same subject, I beg leave, through the means of your work, to lay before the public a few of my thoughts relative to this important affair.

I have been many years a farmer; have diligently attended, for a long series of time, to the business of my calling, and, I thank my God, have so far profited by it, as to have acquired for my old age a comfortable means of subsistence.

I am first to inform you, gentlemen, that many years ago I imagined that a general introduction of a method of mowing our crops of wheat would be of singular service to the nation in general, and the farmers in particular; but at the same time I had great reason to apprehend, that the scythes commonly used for mowing barley or oats would not answer in the same intention for wheat; and I also imagined, that some other method of mowing, than that generally used in England, must be invented, if we would mow our wheats.

I may, perhaps, on this occasion be asked, why I did not myself attempt it: to this I answer, that I did once, with the common scythes, and ordinary workmen, make the experiment; but, I must at the same time ingenuously own, it was with very bad success; but this was, I am persuaded, in a great measure, owing to the obstinacy and wickedness of the workmen, who wilfully spoiled me a

considerable quantity of corn, that they might cure me of enterprizing to the prejudice of the poor: for they took it into their heads, that if wheat was to be mowed throughout the kingdom, half our hands in harvest would want employment.

It was in vain for me to contend; I had no money to throw away, and it would have been highly improper for me to attempt encountering the prejudice of a whole parish, for my brother farmers joined with the labourers against me, vowing they would never countenance innovations in husbandry, which they imagined their fathers understood to the full as well as any, the most intelligent, of their sons.

This it was which prevented me in the prime of life from attempting to introduce several innovations, which, I am confident, would be of infinite service. I could not afford to lose either my time or money; and for some years past, since I am grown older, and somewhat rich, though the other objections are removed, I find myself too infirm to put in execution many schemes which I had formed for the improvement of the old methods of farming.

Though too old to practise novelties, I yet think myself capable of advising others, who have it more in their power to do good than I ever had in these matters.

I am greatly pleased with the public spirit and good sense of your correspondent Y. Z. and if he has but influence, in proportion to his desire of doing good, I have not the least doubt but the world will greatly benefit by him.

I also think that the world is greatly obliged to the Rev. Mr. Comber, who writes to you from Yorkshire, for the account he has given you of the method of mowing wheat practised in the Wolds in that county.

As far as I can understand by his letter, it has long been in use there, and, of course, the workmen, annually employed in it, cannot but some of them be very expert in the use of their scythes; I would therefore, by all means, advise the Northamptonshire gentleman, whoever he is, to procure, without delay, three or four good mowers from

the Wolds, who might not only try the scythes they now commonly use with those brought from abroad, but might also soon be taught how to use the foreign ones with great expertness.

Was this point once gained, mowing wheat might soon be brought into general use: as to the scythe that should be used, it would be no ways material whether it were an English or a foreign one, provided that was chosen and preferred which was really and truly best adapted to do the work.

Yet, after all, I am very sensible, that when it is to an evident demonstration, by repeated experiments, proved that mowing wheat ought to be preferred to reaping or shearing it, it will nevertheless be a work of great difficulty to persuade the common farmers to adopt it. I know them well: they love to jog on in the same beaten track, and think that leaving it will greatly increase their trouble of thought, which, by the bye, they in general abhor; besides the uncertainty of success, for they will scarcely be induced to believe that any thing out of the common way can succeed, though they see it with their own eyes.

There is also another difficulty to be got over; I mean the prejudices of the workmen, who are generally, as far as I can learn, of opinion, that to introduce mowing wheat would be doing them, their families, and their posterity, a cruel injury, as it would require in harvest much fewer hands to mow than to reap a crop of wheat; by which means some of them must of course be left idle.

All this might easily, I am sensible, be answered and confuted: but to what purpose is it to argue with men who either do not, or through some prejudice will not, comprehend, or be convinced, by the force of reason? Another method, much more powerful, must be taken to bring them over; we must speak to their interest, and they will open their ears.

I would recommend that as soon as ever the propriety of mowing wheat is ascertained by accurate, impartial, and well-authenticated experiments, the society for promoting arts

should encourage the practice of it by proper premiums, as well pecuniary as honorary: this would excite an emulation, and spread the practice much sooner, in various parts of the kingdom, than any recommendatory advertisement, which either the society, or any of its committees, can draw up and insert in the public papers.

As I have proceeded so far; I will venture to advance one step forwarder, and mention to you the manner in which I would have these premiums offered, for on that will, in a great measure, depend any good effect that may be expected from them. I am the rather prompted to do this, as I have no other means of conveying my sentiments to the members of the society, for it would be impertinent in me, who am no member, to write a long letter to the secretary, which, after all, may be esteemed not deserving of notice.

By communicating my thoughts through your collection, any of the members (I suppose most of them are your readers) may adopt them, and propose them to the society as their own, if they please; for I am quite satisfied if good can by any means arise from what I offer, without being anxious about the honour which may be attendant on it.

But to resume the subject, (which some of your readers may imagine I had almost lost sight of) I would recommend that the society should set apart the sum of three hundred pounds annually, for some time to come, for the encouragement of mowing of wheat (provided the expediency of it should be ascertained) in the manner above mentioned.

I would presume also to recommend, that two hundred pounds of this money should be offered in the following manner; that is to say, to such farmer, renting or occupying a farm, in which there is not less than two hundred acres kept in tillage, who should, in one harvest, cause to be mowed, in the manner directed by the society, the greatest number of statute acres of wheat, being not less than forty, one hundred pounds; to the farmer who should cause the next greatest quantity of land in wheat to be

mowed, holding a farm as above, and mowing not less than thirty acres, sixty pounds; and for the third greatest quantity, as above, not less than twenty acres, forty pounds; to be paid on proper certificates being produced to the satisfaction of the society.

The remaining hundred pounds I would wish to be disposed of for the encouragement of a lower class of farmers, I mean such as rent, or occupy, farms in which there are less than two hundred, but more than one hundred, acres in constant tillage. To such farmer, last described, who should cause to be mowed most wheat in harvest, not less than twenty-five statute acres, fifty pounds; for the second greatest quantity, not less than eighteen acres, thirty pounds; and for the third greatest quantity, not less than twelve acres, twenty pounds.

As many gentlemen occupy lands of their own, in various quantities, it may also be necessary to publish honorary premiums on this subject; and I should think that the society would do well to have some particular medals struck for encouraging the candidates in the various departments; on one side of which should be the society's emblem, whatever it be, and on the reverse should be an inscription containing the candidate's name, and the reason for which the medal was given.

The expence attending this method could never be put in competition with the advantages which must necessarily result from the measure: these medals would confer a lasting honour on the persons who should be so happy as to merit them; whereas those which are now given, are, as far as I am informed, (for I never saw any of them) only so far a reward as their intrinsic weight of metal may be worth a larger or a smaller sum.

I am a great friend to modest merit, and would wish to see it, on all occasions, encouraged.

But to return once again to what I intended should be the more immediate subject of this letter, (I mean mowing of wheat) I should be glad if the ingenious and public-spirited Northamptonshire gentleman above mentioned would be a little

little more accurate and particular in the accounts which he should certainly keep of all the trials which are made with the various scythes in the hands of various workmen. I would also recommend that he try his experiments in every possible mode he can think of, and on every variety of crops, such as strong and weak, thick and thin, low and rank, taking care to keep a journal of all proceedings in this affair, which, I must needs own, I have greatly at heart, as deeming it of the utmost national importance.

I shall, before I conclude, give you a few reasons why I think it of such importance.

In the first place, I have great reason to think that our meal, in general, for making bread, would be much better than it now is; for, as a great deal more wheat may be mown by the same number of hands, in a given time, than can be cut either with a hook or sickle, we must necessarily conclude, that supposing the same number of hands to be employed, as are now annually hired for getting in harvest, (and we have no reason to suppose the contrary would be the case) our wheat would certainly be cut and housed in a much shorter space of time than if it was still to be reaped; of consequence the hazard would be less of its getting damage in the field by wet, which it, in the present practice, too often does.

Secondly, if we could, by mowing our wheat, contrive to finish our harvest work in less time, the woollen, and other manufactories, would be greatly benefited by it; for, in the course of a long harvest, our manufacturers now often severely feel the want of the hands which the necessity of getting in the corn of course deprives them of for the space of several entire weeks; by which means they are often divested of the power of executing the orders they may at that time receive from the merchants. I could say more, but that I think my letter already sufficiently long.

I am, GENTLEMEN,

Manchester,
July 7, 1764.

Your constant reader,
A LANCASHIRE FARMER.

NUMBER CIX.

Premiums adjudged by the Society for the Encouragement of Arts, &c. in the Strand, in consequence of the Advertisements in 1763.

AGRICULTURE.

FOR sowing acorns, 22 acres. A gold medal to John Buxton, Esq; of Rushford, Norfolk.

Scotch fir, 104,000 plants. A gold medal to Robert Fenwick Esq; of Limington, Northumberland.

Ditto, 14,000 plants. A silver medal to John Mount, Esq; of Wasing, Berks.

Lucerne, 13 acres 23 rods. John Vallence, of Patchum, near Brightelmstone, Suffex, 20 l.

Ditto, 12 acres, 3 roods, 11 rods. James Bedell, of North Cray, Kent, 15 l.

Ditto, 11 acres. James Edwards, of Dulverton, Somerset, 10 l.

For sowing carrots, 30 acres 2 roods. Mr. Robert Billing, of Weasenham, All Saints, Norfolk, 20 l.

Ditto, 10 acres. Mr. John Darch, of Brushford, Somerset, 10 l.

White clover seed, 21 cwt. 1 qr. 13 lb. John Freeman, Esq; of Chute Lodge, Wilts, 20 l.

Madder. 5 l. for every acre planted, to the following candidates, viz. To Mr. Francis Harris, Iwer, Bucks, one acre. Mr. John Goddard, Ditchling, Suffex, one acre, 24 rod. Mr. Gabriel Curner, North Mutford, Devonshire, ten acres. Messrs. Abraham Prebbel and Joseph Royle, St. Mary Northgate, Canterbury, 15 acres. Everard Buckworth Herne, Esq; Heverland, Norfolk, two acres. Mr. Francis Buti, Burchington, Thanet, one acre. Rev. Mr. John Peele, Tilney, Norfolk, one acre. Mr. J. Ranson, Stowmarket, two acres. Messrs. J. Lane and William Kemp, Teynham, Kent, seven acres. Mr. John Simmons, Preston, Kent, two acres. Mr. James Cole, Ditchingham, Norfolk, one acre. Mr. Francis Crump, Battersea, Surry, three acres. Mr. Jacob Pattison, Whitham, Essex, one acre. Mr. Joseph Flight, Bermondsey, Surry, one acre 27 rod. *Ditto*, in Thames Ditton, Surry, two acres. William Hutchins, Esq; Barn-

Barn-Elms, Surry, two acres. Mr. William Goffe, Ringwood, Hampshire, two acres.

Hemp. 40 l. to Joseph Higgins, of Preston, Salop, having sown 35 acres 37 perch. 30 l. to John Elsmere, of the parishes of St. Julian and Pontsbury, Salop, having sown 19 acres 3 roods 16 perches. 40 l. to Cristopher Michell, of Putford, Devon, having sown 45 acres 3 rood 22 rod. 30 l. to John Davy, of Yeovil and West Coker, Somerset, having sown 43 acres three rood 10 perch and 7-10ths. 20 l. to William Jones, of Putford, Devon, having sown 40 acres two rood 17 perch. 10 l. to Giles Hawkins, of East Chinnock and West Coker, Somerset, having sown 31 acres.

Bee Hives. Gold medal to Mr. Thomas Fawcet, of Oxque, in the parish of Marrick near Richmond, Yorkshire, having in his possession 124 hives with bees. Silver medal to Mr. Thomas Haynes, of Oundle, Northamptonshire, having 105 hives.

CHEMISTRY.

For zaffre and smalt. 50 l. to Mr. Nicholas Crisp, of Bow Church-yard.

For verdeggris. 100 l. to John Bindley, Esq;

Turky red. 100 l. to Mr. Simon Spurrett, Isleworth, Middlesex.

POLITE ARTS.

For drawings at the Academy. Eight guineas to Mr. William Parry. Seven guineas to Mr. William Lawrenson. Six guineas to Mr. Johnson Carr. Five guineas to Mr. Richard Earlom. Three guineas to Mr. Thomas Jones. One guinea to Mr. Matthew Liart.

For drawings from the Duke of Richmond's gallery. Eight guineas to Mr. William Pennington, Ludgate Street. Seven guineas to Mr. William Parry, who relinquished for a premium in another class. Six guineas to Mr. John Hackwill, St. James's Market. Four guineas to Mr. Joseph Barron, at Mr. Reynolds's, Leicester Fields.

For drawings of a human figure, or figures, from models, casts, or basso relievos. Eight guineas to William Pennington, at Mr. Pennington's in Ludgate Street, who relinquishes for claim 126. Seven guineas to Philip Wickstead, at Mr. Zoffary's, Great Piazza, Covent Garden. Three guineas to Johnson Carr,

Carr, at Mr. Wilson's, Covent Garden, who relinquished for class 125. Two guineas to John Kitchinman.

For drawings of a human figure after a print or drawing. Five guineas to William Lewin, of Mitre Court, the north side of St. Paul's Church Yard. Four guineas to Thomas Brooks, at the Drawing School, Strand. One guinea to Richard Sparrow, at ditto. One guinea to William Stud. Blake, at Mr. Harper's engraver, in Foster Lane, Cheapside.

For drawings of human figures in groupes. Seven guineas to George Sykes, pupil to Mr. Parsons, in Queen Square, Bloomsbury. Five guineas to David Sands, at the Drawing-School, Strand. Three guineas to Robert Dunkarton, at the Bell in Compton Street, Soho.

Drawings of human figures, or heads after drawings or prints. Five guineas to Mr. Robert Steele, at Mr. Pars's, Strand. Four guineas to Mr. William Mondet, at ditto. Three guineas and a half to Thomas Brookes, who relinquished for another class. Three guineas to Mr. Robert Hardy, Drawing-School, Strand. Two guineas to Mr. Philip Stevenard, at ditto. One guinea and a half to Mr. Richard Hurlstone, at ditto. One guinea to Mr. John Milbourn, jun. St. John Street, Oxford Market.

Drawings of fruits, flowers, &c. by girls under 20. Four guineas to Miss Mary Wathen, daughter of Dr. Wathen, Pater-noster Row. Three guineas to Miss Anne Jones, Cambridge Street, Carnaby Market. Two guineas to Miss Mary Brook, daughter of the Rev. Mr. Brook, of Gamston, near Retford, Nottinghamshire. One guinea to Miss Mary Chambers, at the Brew-house in Milford Lane, Strand.

Drawings of ornaments by girls under 18. Three guineas to Miss Mary Fearon, Milbank, Westminster. Two guineas to Miss Anne Sherborn, at the Drawing-School, Strand.

Ditto for the use of weavers. Six guineas to Miss Alice Morrison, Moorfields.

Drawings of ornaments by youths under 20. Ten guineas to Mr. John Bellington. Six guineas to Mr. William Sharp. Four guineas to Mr. John Millar.

Ditto by youths under 20. Seven guineas to Mr. William Woodward, at Mr. Frow's, in Portugal Street. Four guineas to Mr. Samuel Paris, Primrose Street, Bishopsgate Without.

Drawings of any kind by boys under 14. Five guineas to Andrew Thornthwait, Drawing School, Strand. Four guineas

neas to John Alexander, at Mr. Parsons's, Queen Square, Bloomsbury. Three guineas to James Jones, Drawing-School, Strand. Two guineas to Thomas Brooks, who resigned for class 128. One to Robert Steele, who resigned for class 130.

Drawings of any kind by girls under 15. Five guineas to Miss Tuckwell, daughter of Mr. Edward Grant Tuckwell. Four guineas to Miss Mary Bruce Strange, Castle Street, Leicester Fields. Three guineas to Miss Elizabeth Graham, daughter of Col. Graham, Berkeley Square. Two guineas to Miss Anne Pars, Drawing-School, Strand. One guinea to Miss Penelope Graham.

Drawings of a horse. Eight guineas to Mr. Thomas Hearn, at Mr. Bishop's, Maiden Lane, Strand. Seven guineas to Mr. Christopher Finch, at Mr. Pars's Strand.

For drawings of landscapes. 15 guineas to William Hodges, at Mr. Wilson's, in the Great Piazza, Covent Garden. Nine guineas to Joseph Farrington, at Mr. Wilson's, ditto. Six guineas to John Fougerson, at Mrs. Marthegey's, a Toy-shop in Great St. Andrew's Street, Seven Dials.

Designs in architecture. 30 guineas to Mr. James Gandon, at Mr. Hussey's, Coventry Street. 20 guineas to Mr. Thomas Cooley, carpenter, in Great Poland Street. Ten guineas to Mr. Robert Baldwin, Bridge-Office, Black Fryars.

Drawings in architecture. Ten guineas to Mr. James Pollard, at Mr. Atkinson's, Hyde-Park-Corner. Seven guineas to Mr. Richard Edwin, at Mr. Brettingham's in Dufour Court, Broad Street, Soho. Three guineas to Mr. Thomas Sutton, at Mr. Laurex's, Great Russell Street, Bloomsbury.

Historical drawings. 20 guineas to Mr. J. Donaldson, Prince's Street, Leicester Fields. Five guineas to Mr. John Edwards, Little Queen Street, Lincoln's Inn Fields.

Medallion. Ten guineas to Mr. John Taylor, at Mr. Milxan's in Vine Street, Piccadilly.

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To Mrs. Mary Whitefide, for her invention of making lace with knitting needles,	10 10 0
To Mr. Carter, for his attempt in making a substitute for borax, 10l.	

NUMBER CXI.

To the Editors of the MUSEUM RUSTICUM.

GENTLEMEN,

IF the under-written will be of any service to the public, I pray insert it in your collection.

A short Dissertation on Marle.

IT is taken out of the bowels of the earth at several depths, is of divers colours as after named, and some sorts have often two or three colours intermixed. It is unctuous, of a slippery nature, and in goodness pure; soon relents after rain, and, when dry, slackens like lime, and at last dissolves into the finest powder.

I intend to leave with you some specimens of two kinds of marle (which you may give to the gentlemen or farmers who desire them): they are what I have collected in Middlesex, which county abounds with good marle; but it is not used by the gentry, or farmers, so much as it ought, because they have so readily dung, soot, ashes, and other composts, from London.

In order to discover marle, the best way is to use the auger, and observe the strata taken up from time to time by it.

I have found, after I have got through the surface, which is about a spade and half deep, that the next earth was a very strong, coarse, bed of clay, five or six feet deep; afterwards, getting through it, the auger brought up marle, viz. that which appears of a fine light-brown colour, and some of it mixed with blue veins (which I will here call *pigeon marle*, by way of distinction): here was a bed of this pigeon marle of five or six foot deep, and after that followed another kind of marle, which I will call *toad marle*, by way of distinction; this is heavier, and without any veins of blue.

When either of these marles are dug out of the pit, the spade cuts them like so much soap; and the last-named marle looks very blackish and dark, and may be, and I believe is, in some countries, called *toad marle*, from its resemblance in colour to that animal; but this marle being exposed to the air alters the colour very much. This appears to me to be the strongest marle.

Marle may be discovered sometimes near the surface, by carefully observing the ditches and fences of your lands.

It is frequently found near rivers, or brooks, and sometimes may be discovered on the banks of such waters.

To know when you have found true Marle, try it by Air, Fire, and Water, or Vinegar.

First, By exposing a large lump of three or four pounds in the air, which, if true marle, will, in a little time, by the nitre, dews, &c. break into small parts; and there will be an hoary, or white, congelation on that part of it which is exposed to the sun.

Secondly, When your marle is dry, break it into small particles, and put an handful into an hot coal fire, and it will crackle as if so much salt had been put therein.

Thirdly, Place a piece of the dried marle in a glass, and thereon gently pour as much water as will cover it. If true marle,

marle, it will then gradually moulder, and dissolve into a liquid soap. Let not the glass be shaken, that you may observe the ebullition (which is material); or you may, in like manner, try it with vinegar, where the effervescence, or struggling, will be much stronger than in water.

The Virtues of Marle.

IT is the best manure for sandy, dry, gravelly, or light lands of any kind. It is excellent for mossy lands. It is, indeed, good for all other lands, of what nature soever, even clay*, provided care be taken in laying on a proper quantity, and that the same be well dissolved.

Care must be taken in the quantity used; if too little, you may easily add; but if too much is laid on the land, you cannot take it away.

It is used in some countries for arable lands only; yet it is as good for grass or pasture lands, but does not the first, and seldom till the second year, shew forth its utility; and then you will observe the grass to shoot out a dark, or blackish colour, which afterwards turns to the finest green; and with it come up quantities of white clover grass, which hath occasioned me some difficulty with the farmers to convince them I had not sown the clover-seed.

If lands are properly marled, they will continue good for twelve or fourteen years for the plough; and for pasture, or grass-lands, much longer.

I would recommend that the plough be not suffered to enter into the land till the marle is thoroughly dissolved.

Fish thrive prodigiously, and grow fatter in marle pits than any other ponds.

Quantities

* We should be very much obliged to our correspondent if he would inform us what precautions are to be used in marling clay, which kind of marle is best suited to it, and in what quantities it should be laid on. Our principal reason for giving him this trouble is, because many farmers are of opinion, governed by an old prejudice, that marle is by no means a proper manure for clay. Q.

Quantities to be used.

A great difficulty this to ascertain the quantity.

In some counties they will tell you of laying three hundred loads to an acre, others more, others less; but they no where ascertain what is a load. In Cheshire and Lancashire their loads are scarcely six bushels, and they use a small cart made for the purpose, drawn by two or three small horses.

If the land is gravelly, sandy, or light, let as much be laid on it as will make a good thick coat to bind and stiffen the soil.

But let the land be what it will, so much should, in all events, be laid on as will make a thin coat over the entire surface.

Upon my lands, which are grass and pasture, of a tolerable mould, on a clayey soil, and which were left, about eight years since, in a bad plight, by the late tenant, I first attempted to lay ten loads to every acre, (by a load I mean as much as three large, well-fed, strong horses could draw) but found it was too little, and would not meet in the spreading.

I immediately doubled the quantity, and two years afterwards I added another coat of fifteen loads more to every acre, and find it answers very well for hay and pasture. I need not say horses and cows are fonder of this hay and grass than of that wherein the dung may be tasted and smelt.

A work of this kind should be set about by the end of August, or beginning of September; and the loads should be shot into small heaps, as the Middlesex farmers shoot their dung, *viz.* two or three bushels in each heap; and a man must be ready to separate it, that the nitre, air, dews, and rain, coming on the large pieces, may act, and cause them to break, as of themselves, into smaller parts.

After the marle has lain upon the ground, and you see that the air, nitre, &c. have loosened the great lumps, and they are ready, on a slight touch, to fall into pieces, a person should

should be ordered (when the weather and marle are quite dry) to break and spread the pieces to complete your coat ; and you should avoid, as much as possible, leaving any large pieces to lie and dissolve without being spread on the surface, but cause them to unite therewith.

In the beginning of February, and in dry weather, I cause an old gate to be well bushed, and a heavy weight laid on it, to be drawn by one horse over the whole field, in order that every part may have its due proportion.

If you intend to plough your lands, the preceding cautions are not so necessary, as the plough and harrows will spread and intermix the marle with the soil sufficiently ; but if you use the drill-plough, the above hints may be useful.

It would take a volume to give an exact and full history of marle, its virtues, and uses, and to shew that it was used by the Romans, and many years discontinued, and especially till the houses of York and Lancaster were united, and then revived in some few counties ; and the great benefits received by marling in Suffolk and Norfolk within a few years past.

We very well know that gentlemen and farmers are a long while ere they care to venture on the practice of marling from theory, and principally from not having seen or known what is, and what is not, true and genuine marle, and from being unacquainted with the rules or modes to judge and determine upon it. Therefore, if this short essay, with the specimens* I intend to give, will obviate their doubts, and in any way contribute to the advancement of agriculture, vegetation, and pasturage, my design is answered.

There are variety of colours in marle, *viz.* blue, white, yellow, red, and other colours, which make no material difference, provided they be earthy and fat, or slippery as soap, and as free as possible from a mixture of sand, gravel, or stone.

I have

* These specimens are left with Messrs. Davis and Reymers, booksellers, in Holborn, where gentlemen or farmers may see them, and, if they please, have samples given them for their use.

I have often chewed marle, but never yet could distinguish any other than an earlly taste in it, and apprehend it similar to the best water, and the best of oils, which have no taste; but when the marle is dissolved in water, and you spread or rub it on your hand, it has a very strong, earthy smell.

I cannot conclude without a necessary quotation from Lord Bacon, and shall leave the reader to make his own comments and observations thereon, *viz.* His lordship, in his account of natural improvements by mixtures of earth with earth rather than dungs, recounts *marle* among others, and gives it the pre-eminence as the most pinguid, rich, and least over-heating *.

X. Y. Z.

London,
July 25, 1764.

A Member of the Society of Arts,
Manufactures, and Commerce.

NUMBER CXI.

To the Editors of the MUSEUM RUSTICUM.

GENTLEMEN,

I Have sent you *a method*, practised in this country, of *draining upland grounds, which abound with springs.*

The trenches made for draining these grounds, are dug two feet deep at least, one foot wide at top, and only nine inches wide at bottom, with a sharp descent to a ditch running along the bottom of the grounds, and made of a proper width and depth to receive the water, and convey it off the premises.

Within these trenches is formed a channel, the sides whereof are composed of pieces of chalk † cut nearly into the size of a brick, which they cap with other pieces of the same material, and the crevices are stopt with some of its chippings.

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D d d

But

* We acknowledge ourselves much obliged to our correspondent for this valuable present, and shall be glad to hear from him as often as his leisure and inclination will permit him to write. O. E.

† The chalk used for this purpose, is the hard, white chalk, not the brown, fat, soapy chalk. T. S.

But the mouth of the channel, from whence the water falls into the ditch, is made with other materials, either bricks or flints, because chalk will not bear the frost, which, if put at the mouth of the channel, it would be exposed to.

Upon the top of the channel is laid a thin coat of wheat-straw *. The passage for the water is somewhat more than three inches. The price of digging the trenches, laying the chalk, and finishing the drains, is eight-pence *per pole*.

Permit me to observe, that in digging the trenches, the workmen always lay the best earth on one side by itself, in order that it may be put uppermost when the trenches are filled up again.

None of the drains so made in this parish have ever yet failed, though some of them have been made many years, and we may almost venture to say, that, if they be carefully executed, and attended to afterwards, they never will fail †.

This method of draining springy grounds seems to me well worthy the attention of the public; and to see that you concur with me in the same opinion, by inserting it in your useful and entertaining collection, will be a great satisfaction to,

GENTLEMEN,

B——d, Berks,

Your humble servant,

July 10, 1764.

T. S.

* Perhaps it might be found better, in point of duration at least, if, in the stead of wheat-straw, the small twigs, cut from the ends of spray faggots, were used, or, in fact, almost any other small brush wood, or even brambles, any of which would we apprehend, be less liable to be damaged by wet, or frost than wheat-straw. E.

† We shall be glad of this correspondent's future favours. R. E.

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